TENDERDOCUMENT

TENDER No: NERO/CON/ASR/KHATIA/352A dated 14.06.2019

FOR

Construction of Boundary Wall for Sector HQ at Khatla, Mizoram

VOLUME I

INSTRUCTIONS TO TENDERERS
&
GENERAL CONDITIONS OF CONTRACT
ADDENDUM TO INSTRUCTIONS TO TENDERERS
SPECIAL INSTRUCTIONS TO BIDDERS FOR E-TENDERING
MEMORANDUM
LETTER OF UNDERTAKING
FORM OF TENDER
AFFIDAVIT PERFORMA
ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

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ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

INSTRUCTIONS TO TENDERERS
ENGINEERING PROJECTS (INDIA) LIMITED

(A Govt. of India Enterprise)

INSTRUCTIONS TO TENDERERS

1.0 MODE OF SUBMISSION

The Tender is to be submitted in two separate sealed covers marked as under:

ENVELOPE-1 :-

This ENVELOPE shall contain the following:

i) Earnest Money Deposit as per clause 2.0 of ‘Instructions to Tenderers’ (ITT).

ii) Letter of Undertaking for un-conditional acceptance of the tender conditions as per proforma given in ITT.

iii) Pre-Qualification Documents and Credentials as per clause 19.0 of ITT.

iv) Volume-I (ITT, General Conditions of Contract), Volume-II (Notice Inviting Tender, Additional Conditions of Contract, Specifications, Drawings) and Corrigendum/Addendum, if any, duly filled in, signed and stamped on each page by tenderer. Cutting or over-writing, if any, shall be signed and stamped by the person signing the Tender. All pro-forma forming part of Tender Documents shall be filled in, signed and stamped by the tenderer.

v) Copy of power of attorney/partnership deed, duly attested by Notary Public authorizing the person who signs the Tender.

vi) Any other information as required to be submitted along-with the Tender.

This envelope shall be marked as:

ENVELOPE-1 “TECHNO-COMMERCIAL BID” FOR (Name of work as mentioned in “Notice Inviting Tender”)

NIT No. : ______________________________
DUE ON : ________________________________
FROM : (Name of the Contractor)

ENVELOPE – 2 :-

This ENVELOPE shall contain only the Volume-III comprising of PRICE-BID.

This envelope shall be marked as:

ENVELOPE-2 : ‘PRICE-BID’ FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. : ______________________________
DUE ON : ________________________________
FROM : (Name of the Contractor)
Both the envelopes / packets shall be individually sealed and kept in an outer envelope marked as:

TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. : __________________________________

DUE ON : __________________________________

FROM : (Name of the Contractor)

The outer envelope shall be duly sealed and shall be delivered at place of submission of Tender by the date and time fixed for receipt of Tender as mentioned in “Notice Inviting Tender”. The Tenders received after the date and time of Tender receipt shall not be considered and shall be returned to the tenderer unopened. EPI shall not be responsible for any postal or other delays, whatsoever and tenderer should take care to ensure the submission of Tender at place of receipt of Tender by due date and time fixed for Tender receipt. All the envelopes shall be addressed to the authority who has invited the Tender as mentioned in “Notice Inviting Tender”.

1.1 First the Envelope-1 of the tenderer shall be opened. Tenderers who unconditionally accept the tender conditions, deposit the required Earnest Money and whose Techno-Commercial Bid along with PQ Documents is found suitable shall be considered for the opening of their Price Bid and Envelope-2 of such tenderers shall only be opened. The Tenders not accompanied by requisite Earnest Money and / or not conveying un-conditional acceptance of tender conditions or whose Techno-Commercial Bid and PQ Documents are not found suitable, shall be rejected and such tenderer shall not be allowed to attend Price Bid opening i.e. opening of Envelope-2.

1.2 Once the tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s) / condition(s) (except unconditional rebate on price, if any) in / along with the ‘Price-Bid’ / Tender.

1.3 In case the condition 1.2 mentioned above is found violated at any time after opening of Tender, the Tender shall be summarily rejected and EPI shall, without prejudice to any other right or remedy, be at liberty to forfeit the full said Earnest Money absolutely.

2.0 EARNEST MONEY DEPOSIT

Earnest Money Deposit of amount as mentioned in “NIT/ITT/Memorandum” to “Form of Tender” required to be submitted alongwith the Tender shall be in the form of Demand Draft payable at place as mentioned in “NIT/ITT” in favour of EPI Limited from any Nationalized / Scheduled Bank or in the form of Bank Guarantee from any Nationalized / Scheduled Bank in enclosed format. The EMD Bank Guarantee shall be valid for a minimum period of 150 (One Hundred Fifty) days from last day of submission of Tender. The EMD shall be governed by Clause 7.0 of General Conditions of Contract.

3.0 EPI reserves the right to reject any or all the Tenders in part or full without assigning any reason whatsoever thereof. EPI does not bind themselves to
accept the lowest Tender. EPI reserves the right to award the work to a single
party or to split the work amongst two or more parties as deemed necessary
without assigning any reason thereof. The Contractor is bound to accept the
portion of work as offered by EPI after split up at the quoted / negotiated rates.

4.1 FOR ITEM RATE TENDERS

4.1.1 The tenderers should quote the rates for items tendered by them in figures as
well as in words and the amounts in figures only. The amount for each item
should be worked out and the requisite totals and page totals given.

4.1.2 All corrections/cuttings should be signed by the tenderer. Each page of the
Tender should be signed by the tenderer. In the event of discrepancy between
rate in figures and words the rate quoted in words shall be treated as correct. In
case there is discrepancy between rate and amount worked out, the rate quoted
shall be taken as correct and not the amount.

4.1.3 Price shall be entered against each item in Bill of Quantities where quantities or
LS (lump-sum) has been mentioned. The cost of item against which the
Contractor has failed to enter a rate or price shall be deemed to be covered by
rates and prices of other items in the Bill of Quantities and no payment shall be
made for the quantities executed for items against which rate has not been
quoted by Contractor. No rate is to be quoted against items for which no quantity
is given. However, the Contractor has to quote rate against “LS” items.

4.2 FOR PERCENTAGE RATE TENDERS

4.2.1 In case of Percentage Rate Tenders, tenderer shall fill up in the Schedule / Bill of
Quantities, percentage Below/Above/Par (in figures as well as in words) to total
estimated cost given in Schedule / Bill of Quantities, he will be willing to execute
the work. The tenderer should quote a unique single percentage plus / minus
over the total estimated amount given in Schedule / Bill of Quantities. In case
more than one schedule is given, stipulating quoting of separate percentages
(plus or minus) over the estimated amount of each schedule, the tenderer can
quote separate percentages for each such schedule. Under no circumstances,
tenderer is allowed to quote separate percentages for individual items, trades or
group of items. In case tenderer quotes separate percentages for individual
items, trades or group of items instead of to the total amount of schedule(s), the
Tender shall be rejected and earnest money of the tenderer shall be forfeited in
totality.

4.2.2 In case of Percentage Rate Tenders, the tenderer shall also work out the total
amount of his offer after adding percentage (plus or minus) over the total
schedule amount and the same should be written in figures as well as in words in
such a way that no interpolation is possible.

4.2.3 In case of Percentage Rate Tenders, only percentage quoted shall be
considered. Any tender containing item rates is liable to be rejected. Percentage
quoted by the tenderer in Percentage Rate Tender shall be accurately filled in
figures and words. All corrections/cuttings should be signed by the tenderer.
Each page of the Tender should be signed by the tenderer. In the event of
discrepancy between percentage rate in figures and words, the percentage rate
quoted in words shall be treated as correct. In case there is discrepancy between percentage rate and amount worked out the percentage rate quoted shall be taken as correct and not the amount. For any other discrepancy, the decision of Tender Scrutiny Committee of EPI shall be final & binding on the tenderer including rejection of Tender and forfeiture of EMD.

5.0 The Tenders shall be strictly as per the conditions of contract. Tenders with any additional condition(s)/modification(s) shall be rejected.

6.0 The witnesses to the Tender / Contract Agreement shall be other than the tenderer / tenderers competing for this work and must indicate full name, address, status/occupation with dated signatures.

7.0 The acceptance of Tender will rest with EPI. Tenders in which any of the prescribed conditions are not fulfilled or found incomplete in any respect are liable to be rejected.

8.0 Canvassing whether directly or indirectly in connection with Tenders is strictly prohibited and the Tenders submitted by the Contractors who resort to canvassing will be liable to rejection.

9.0 On acceptance of Tender, the name of the accredited representative(s) of the Contractor who would be responsible for taking instructions from Engineer-In-Charge or its authorised representative shall be intimated by the Contractor with 07 days of issue date of telegram / letter / telex / fax of Intent by EPI.

10.0 The tenderer shall not be permitted to Tender for works if his near relative is posted as an Assistant Manager or any higher ranks in the concerned Regional Office of EPI. The Contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any of the officers in EPI. Any breach of this condition by the tenderer would render him liable to the withdrawal of the work awarded to him and forfeiture of Earnest Money and Security Deposit. This may also debar the Contractor from tendering for future works under EPI.

11.0 No employee of EPI of the rank of Assistant Manager and above is allowed to work as a Contractor or as an employee of a Contractor having interest in EPI for a period of two years after his retirement/relief from the service of EPI, without the prior permission of EPI in writing. This contract is liable to be cancelled if either the Contractor or any of his employee is found at any time to be such a person who had not obtained the permission of EPI as aforesaid before submission of the Tender or engagement in the Contractor’s service.

12.0 The time of completion of the entire work, as contained in contract shall be as mentioned in “Memorandum” to “Form of Tender”, which shall be reckoned from the 10th day from issue of the Letter / Telex / Telegram / Fax of Intent by the EPI.

13.0 The Tender award, execution and completion of work shall be governed by Tender Documents consisting of (but not limited to) Letter of Intent / Letter of work Order, Bill of Quantities, Additional Conditions of Contract, General Conditions of Contract, Specifications, Drawings, etc. The tenderers shall be
deemed to have gone through the various conditions and clauses of the Tender and visited the Site and satisfied itself with Site conditions including sub-soil water conditions, topography of the land, drainage and accessibility etc. or any other condition which in the opinion of Contractor will affect his price / rates before quoting their rates. No claim whatsoever against the foregoing shall be entertained by EPI.

14.0 The Drawings given with the Tender Documents are TENDER DRAWINGS and are indicative only.

15.0 Transfer of bid documents purchased by one intending bidder to another is not permissible.

16.0 Tenders must be duly signed with date and sealed. An attested copy of power of attorney/affidavit/Board Resolution executed as under shall accompany the ‘Tender Documents’.

   a) In case of Sole Proprietorship, an affidavit of Sole Proprietorship and if the Tender is signed by any other person Power of Attorney by the Sole Proprietor in favour of signatory.

   b) In case of Partnership firm, if Tender is not signed by all the partners, Power of Attorney in favour of the Partner/person signing the tender/documents by all the partners authorizing him to sign the tender/documents.

   c) In case of Company, copy of the Board Resolution authorizing the signatory to sign on behalf of the Company.

17.0 Tenders with following discrepancies are liable for rejection:-

   a) Tenders with over-written or erased rates, percentages, amounts or rates, percentages not written in both figures and words.

   b) Tender that is incomplete, ambiguous, and not accompanied by the documents asked for or submitted without EMD or with inadequate EMD.

   c) Tender received after specified date/time whether due to postal or other delays.

   d) Tender in respect of which canvassing in any form is resorted to by the tenderer whatsoever.

   e) If the tenderer deliberately gives wrong information in his tender or resorts to unfair methods in creating circumstances for the acceptance of his tender, EPI reserves the right to reject such tender at any stage.

18.0 Submission of a tender by the tenderer implies that he has read the complete contract documents and has made himself aware of the scope, terms & conditions and specifications of the work to be done and of conditions at which stores, tools, plant, etc. will be issued to him by EPI (if any), local conditions and
political situations and other factors having bearing on the execution of the works. No claim of Contractor whatsoever, within the purview of this clause, shall be entertained at any stage of the project.

19.0 Tenderer shall submit the following documents along with their Tenders in the first envelope (Techno-Commercial Bid):

a) List of works executed during the last 5 years indicating name of the Client, value, date of start and completion.
b) List of works under execution indicating name of the Client, Total Contract Value, Value of balance work in hand, date of start and completion.
c) Details of similar works executed.
d) Audited balance sheets and profit and loss accounts alongwith schedules for the last 3 years.
e) Copy of latest income-tax returns filed along with PAN.
f) Details of manpower available.
g) Details of equipments, tools and plant available.
h) Credentials and completion certificates.
i) Registration Certificate/Memorandum and Articles of Association/Partnership Deed/Affidavit.
j) Copy of Provident Fund Number allotted by PF authorities.
k) Copy of letters of registration with various authorities like CPWD, State PWD, MES and Public Sector Undertakings, etc.
l) Latest Solvency certificate from Nationalised/Scheduled Bank.
m) Latest Sales Tax Registration and Clearance Certificate.
n) Any other document as stipulated above and in “Tender Documents”

20. Purchase Preference may be granted to the Central Public Sector Enterprises as per the applicable guidelines in force in this regard issued by the Government of India.
LETTER OF UNDERTAKING

(TO BE ENCLOSED IN ENVELOPE-1 ALONGWITH EMD)

ENGINEERING PROJECTS (INDIA) LIMITED
(Address of submission as mentioned in “Notice Inviting Tender”)

REF. : TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. : __________________________

Sir,

UNDERTAKING FOR ACCEPTANCE OF TENDER CONDITIONS

1. The Tender Documents for the work as mentioned in “Memorandum” to “Form of Tender” have been issued to me / us by ENGINEERING PROJECTS (INDIA) LIMITED and I / We hereby unconditionally accept the tender conditions and Tender Documents in its entirety for the above work.

2. The contents of clause 1.2 and 1.3 of the Tender Documents (Instructions to Tenderers) have been noted wherein it is clarified that after unconditionally accepting the tender conditions in its entirety, it is not permissible to put any remark(s) / condition(s) (except unconditional rebate on price, if any) in the ‘Price-Bid’ enclosed in “Envelope-2” and the same has been followed in the present case. In case this provision of the Tender is found violated at any time after opening “Envelope-2”, I / We agree that my/our tender shall be summarily rejected and EPI shall, without prejudice to any other right or remedy be at liberty to forfeit the full said Earnest Money absolutely.

3. The required Earnest Money for this work is enclosed herewith.

Yours faithfully,

(Signature of the Tenderer)

Seal of Tenderer

Dated : _______________________

Signature of Contractor
FORM OF TENDER

To,

Engineering Projects (India) Limited
(Address of submission as mentioned in “Notice Inviting Tender”)

REF. : TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. :

1. I/We hereby tender for execution of work as mentioned in “Memorandum” to this “Form of Tender” as per Tender Documents within the time schedule of completion of work as per separately signed and accepted rates in the Bill of Quantities quoted by me/us for the whole work in accordance with the Notice Inviting Tender, Conditions of Contract, Specifications of materials and workmanship, Bill of Quantities Drawings, Time Schedule for completion of jobs, and other documents and papers, all as detailed in Tender Documents.

2. It is agreed that the time stipulated for jobs and completion of works in all respects and in different stages mentioned in the “Time Schedule for completion of jobs” and signed and accepted by me/us is the essence of the contract. I/We agree that in case of failure on my/our part to strictly observe the time of completion mentioned for jobs and the final completion of works in all respects according to the schedule set out in the said “Time Schedule for completion of jobs” and stipulations contained in the contract, the recovery shall be made from me/us as specified therein. In exceptional circumstances extension of time which shall always be in writing may, however be granted by EPI at its entire discretion for some items, and I/We agree that such extension of time will not be counted for the final completion of work as stipulated in the said “Time schedule of completion of jobs”.

3. I/We agree to pay the Earnest Money, Security Deposit cum Performance Guarantee, Retention Money and accept the terms and conditions as laid down in the “Memorandum” to this “Form of Tender”.

4. Should this Tender be accepted, I/We agree to abide by and fulfill all terms and conditions referred to above and as contained in Tender Documents elsewhere and in default thereof, allow EPI to forfeit and pay EPI, or its successors or its authorized nominees such sums of money as are stipulated in the Tender Documents.

5. I/We hereby pay the earnest money amount as mentioned in the “Memorandum” to this “Form of Tender” in favour of Engineering Projects (India) Limited payable at place as mentioned in the “NIT/ITT”.

Signature of Contractor

Page 8

EPI
6. If I/we fail to commence the work within 10 days of the date of issue of Letter of Intent and / or I/We fail to sign the agreement as per Clause 84 of General Conditions of Contract and/or I/We fail to submit Security Deposit cum Performance Guarantee as per Clause 9.0 & 9.1 of General Conditions of Contract, I/We agree that EPI shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Intent and to forfeit the said earnest money as specified above.

7. I/We are also enclosing herewith the Letter of Undertaking on the prescribed pro-forma as referred to in condition of NIT.

Date the __________________________ day of _______________________________

SIGNATURE OF TENDERER

NAME (CAPITAL LETTERS) : _________________________________________

OCCUPATION _________________________________________

ADDRESS  _______________________________________

_______________________________________

SEAL OF TENDERER
MEMORANDUM

(ENCLOSURE TO FORM OF TENDER)

REF. : TENDER FOR (Name of Work as mentioned in “Notice Inviting Tender”)

NIT No. : __________________________________

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>Cl. No.</th>
<th>Values / Description to be applicable for relevant clause(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Name of work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td>Owner/Client / Employer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td>Type of Tender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td>Earnest Money Deposit</td>
<td>NIT</td>
<td>Rs.________ (Rupees_________________ only).</td>
</tr>
<tr>
<td>v)</td>
<td>Estimated Cost</td>
<td>NIT</td>
<td>Rs.________ (Rupees_________________ only).</td>
</tr>
<tr>
<td>vi)</td>
<td>Time for completion of work</td>
<td>NIT</td>
<td>Total work to be completed in ___________________________ (____________________) in accordance with the time schedule of completion of work in the Tender Documents.</td>
</tr>
<tr>
<td>vii)</td>
<td>Mobilization Advance</td>
<td>8.0</td>
<td><strong><strong><strong>% (</strong></strong></strong>__________ Percent) of Contract Value.</td>
</tr>
<tr>
<td>viii)</td>
<td>Interest Rate on Mobilization Advance</td>
<td>8.0</td>
<td>Simple Interest Rate of <strong><strong><strong>%(</strong></strong></strong>____ percent only) per annum.</td>
</tr>
<tr>
<td>ix)</td>
<td>Number of Instalments for recovery of Mobilisation Advance</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>x)</td>
<td>Schedule of Rates applicable</td>
<td>69.0</td>
<td>Civil Works : ___________________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sanitary Works : ___________________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electrical Works : ___________________________</td>
</tr>
<tr>
<td>xi)</td>
<td>Validity of Tender</td>
<td>4.0</td>
<td>90 (Ninety) Days</td>
</tr>
<tr>
<td>xii)</td>
<td>Security Deposit cum Performance Guarantee</td>
<td>9.0</td>
<td>5.00% (Five Percent only) of Contract Value within 10 days from the date of issue of telegram / letter / telex / FAX of Intent of acceptance of Tender.</td>
</tr>
</tbody>
</table>

Signature of Contractor
### Instructions to Tenderers
#### Engineering Projects (India) Limited

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>xiii) Retention Money</td>
<td>10.0</td>
<td>5.00% (Five percent only) of the contract amount, which shall be deducted in the manner set out in this contract.</td>
</tr>
<tr>
<td>xiv) Time allowed for starting the work</td>
<td>43.0</td>
<td>The date of start of contract shall be reckoned 10 days from the date of issue of telegram / letter / telex / FAX of Intent of acceptance of Tender.</td>
</tr>
<tr>
<td>xv) Defect Liability Period</td>
<td>74.0</td>
<td>12 (Twelve) Months from the date of taking over of works.</td>
</tr>
<tr>
<td>xvi) Arbitration</td>
<td>76</td>
<td>Arbitration shall be as per provisions of Clause no.76 of GCC. The Venue of Arbitration shall be ………………………………</td>
</tr>
<tr>
<td>xvii) Jurisdiction</td>
<td>76.3</td>
<td>Courts in -------------------------------</td>
</tr>
</tbody>
</table>

**SIGNATURE OF TENDERER**

**NAME (CAPITAL LETTERS):**

**OCCUPATION:**

**ADDRESS:**

**SEAL OF TENDERER**
ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

GENERAL CONDITIONS OF CONTRACT

AND

LABOUR SAFETY PROVISIONS, MODEL RULES
CONTRACTOR’S LABOUR REGULATIONS
& PRESCRIBED PROFORMAS
GENERAL CONDITIONS OF CONTRACT

1.0 GENERAL

The Contract means the documents forming the Tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of EPI and the Contractor, together with the documents referred to therein including these conditions, the Specifications, Designs, Drawings and Instructions issued from time to time by the Engineer-In-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

1.1 In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them.

1.2 Engineering Projects (India) Limited, hereinafter called 'EPI' proposes to get the works executed as mentioned in the Contract on behalf of Owner/Client.

1.3 The work will be executed as per Drawings “GOOD FOR CONSTRUCTION” to be released by EPI unless otherwise specified elsewhere in the Tender Documents.

1.4 OTHER DEFINITIONS

a) ENGINEER-IN-CHARGE means the Regional Office In-Charge of EPI himself or an engineer of EPI nominated by the Regional Office In-Charge for supervision and/or project management of the project from time to time.

b) WORKS OR WORK The expression works or work shall unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

c) CONTRACTOR The Contractor shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

d) DRAWINGS mean the Drawings referred to in the Bill of Quantities, specifications and any modifications of such Drawings or such other Drawings as may from time to time be approved or furnished by EPI.

1.5 SITE means the lands and other places on, under, in or through which the works are to be executed or carried out and any other lands or places provided by EPI or used for the purpose of the agreement.

f) APPROVAL means approved in writing including subsequent written confirmation of previous verbal approval.
g) **WRITING** means any manuscript typed, written or printed statement under or over signature and/or seal as the case may be.

h) **MONTH** means English Calendar month. ‘Day’ means a Calendar day of 24 Hrs each.

i) **CONTRACT VALUE** means the sum for which the Tender is accepted as per the Agreement/ Letter of Acceptance/ Letter of Intent.

j) **LANGUAGE**: All documents and correspondence in respect of this contract shall be in English Language. In case of any discrepancy between the English version and the Hindi version of these documents, the provisions contained in the English version shall be applicable.

k) **BILL OF QUANTITIES or SCHEDULE OF QUANTITIES** means the priced and completed Bill of Quantities or Schedule of Quantities forming part of the Tender.

l) **OWNER/ CLIENT / EMPLOYER** means the Government, Organization, Authority, Company, Ministry, Department, Society, Cooperative etc. who has awarded the work/ project to EPI and/ or appointed EPI as Implementing / Executing Agency/ Project Manager and/ or for whom EPI is acting as an agent and on whose behalf EPI is entering into the contract and getting the work executed.

m) **IMPLEMENTING/ EXECUTING AGENCY** means EPI

n) **TENDER** means the Contractor’s priced offer to EPI for the execution and completion of the work and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Intent or Award letter. The word TENDER is synonymous with Bid and the word TENDER DOCUMENTS with “Bidding Documents” or “offer documents”.

o) The headings in the clauses/ conditions of Tender Documents are for convenience only and shall not be used for interpretation of the clause/ condition.

p) Words imparting the singular meaning only also include the plurals and vice versa where the context requires. Words imparting persons or parties shall include firms and corporations and organizations having legal capacities.

q) **APPROVED INSURANCE COMPANY** means any Insurance Company registered with ‘Insurance Regulatory & Development Authority’ (IRDA) of India and meeting insurance needs of the projects of EPI.

### 2.0 SITE VISIT AND COLLECTING LOCAL INFORMATION

Before tendering, the tenderer is advised to visit the Site, its surroundings to assess and satisfy themselves about the local conditions such as the working and other constraints at Site, approach roads to the Site, availability of water & power supply, applicability of taxes, duties and levies etc., nature of ground, soil and sub-soil condition, underground water table level, accommodations they may
require etc., river regime, river water levels, other details of river, streams & any other relevant information required by them to execute the complete scope of work. The tenderer may obtain all necessary information as to risks, weather conditions, contingencies & other circumstances (insurgencies etc.) which may influence or affect their tender prices. Tenderer shall be deemed to have considered Site conditions whether he has inspected it or not and to have satisfied himself in all respects before quoting his rates and no claim or extra charges whatsoever in this regard shall be entertained / payable by EPI at a later date.

2.1 ACCESS BY ROAD

Contractor, if necessary, shall build temporary access roads to the actual Site of construction for the works at his own cost to make the Site accessible. The Contractor shall maintain the same in motorable condition at all times as directed by Engineer-In-Charge at his own cost. The Contractor shall be required to permit the use of any roads so constructed by him for vehicles of EPI or any other agencies/ Contractors who may be engaged on the project Site, free of cost.

Non-availability of access roads or approach to Site, for the use of the Contractor shall in no case condone any delay in the execution of work nor be the cause for any claim for compensation.

2.2 HANDING OVER & CLEARING OF SITE

2.2.1 The Contractor should note that area for construction may be made available in phases as per availability and in conjunction with pace of actual progress of work at Site. The work may be required to be carried out in constrained situations. The work is to be carried out in such a way that the traffic, people movement, if any, is kept operative and nothing extra shall be payable to the Contractor due to this phasing / sequencing of the work. The Contractor is required to arrange the resources to complete the entire project within total stipulated time. Traffic diversion, if required, is to be done and maintained as per specification by the Contractor at his own cost and the Contractor shall not be entitled for any extra payment, whatsoever, in this regard.

2.2.2 Efforts will be made by EPI to handover the Site to the Contractor free of encumbrances. However, in case of any delay in handing over of the Site to the Contractor, EPI shall only consider suitable extension of time for the execution of the work. It should be clearly understood that EPI shall not consider any revision in contract price or any other compensation whatsoever viz. towards idleness of Contractor’s labour, equipment etc.

2.2.3 The Contractor shall be responsible for removal of all over-ground and under-ground structures (permanent, semi-permanent and temporary) and constructions from the Site. The cost to be incurred in this regard shall be deemed to be included in the quoted rates of Bill of Quantities items and Contractor shall not be entitled for any extra payment whatsoever, in this regard. Old structures on the proposed Site, if required, shall be demolished by the Contractor properly. The useful material obtained from demolition of structures &
services shall be the property of the Owner/EPI and these materials shall be stacked in workmanship like manner at the place specified by the Engineer-in-charge.

2.2.4 If required, the Contractor has to do site clearance, enabling work, barricading, diversion of Roads, shifting/ realignment of existing utility services, drains, nallahs etc. at his own cost as per direction of Engineer-In-Charge and the Contractor shall not be entitled for any extra payment whatsoever in this regard.

2.2.5 Necessary arrangements including its maintenance are to be made by the Contractor for temporary diversion of flow of existing drain and road, as the case may be. The existing drain, road would be demolished, wherever required, with the progress of work under the scope of proposed project. The existing Road and Drain, which are not in the alignment of the said project but are affected and/or need to be demolished during execution for smooth progress of the project, shall be restored to its original status and condition (including black topping) by the Contractor at his own. The cost to be incurred by Contractor in these regards shall be deemed to be included in the quoted rates of the Bill of Quantities items and Contractor shall not be entitled for any extra payment whatsoever, in these regards.

2.2.6 The Contractor shall be responsible to co-ordinate with service provider/ concerned authorities for cutting of trees, shifting of utilities and removal of encroachments etc. and making the Site unhindered for completion of work. This shall include initial and frequent follow up meetings/ actions/ discussions with each involved service provider/ concerned authorities. The Contractor shall not be entitled for any additional compensation for delay in cutting of trees, shifting of utilities and removal of encroachments by the service provider/ concerned authorities.

2.2.7 The information about the public utilities (whether over ground or underground) like electrical/ telephone/ water supply lines, OFC Cables, sewer lines, open drains etc. is the responsibility of Contractor who has to ascertain the utilities that are to be affected by the works through the site investigation and collection of information from the concerned utility Owners.

2.2.8 The Contractor shall be responsible to obtain necessary approval from the respective authorities for shifting/ re-alignment of existing public utilities. EPI shall only provide necessary letters required for liaisoning by the Contractor in obtaining the approval from the concerned authorities.

2.2.9 Any services affected by the works must be temporarily supported by the Contractor who must also take all measures reasonably required by the various bodies to protect their services and property during the progress of works. It shall be deemed to be the part of the contract and no extra payment shall be made to the Contractor for the same. Shifting/ re-alignment of public utilities should be done without disturbing the existing one. New service lines should be laid and connected before dismantling the existing one.

2.2.10 Shifting/ re-alignment of existing public utilities shall be done by the Contractor as per technical requirement of respective bodies or as per direction of Engineer-In-Charge. Shifting/ re-alignment of public utilities includes all materials, labours,
tools and plants and any other expenses whatsoever for the same. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the Contractor shall not be entitled for any extra payment, whatsoever, in this regard. In case any of these services are shifted by the State Govt/ local authorities themselves for which deposit as per their estimates is to be made to them, the Contractor shall deposit the same and the Contractor shall be paid only at the rates quoted by him in BOQ for quantity specified in the BOQ, if such items are included in the BOQ irrespective of amount paid by him to the State Govt./ local authorities for execution of these works. In case such provision is not made in the BOQ or the quantity exceeds those specified in the BOQ, the same is deemed to be included in the rates quoted by him for other items in BOQ and nothing extra shall be payable to Contractor on this account.

3.0 SCOPE OF WORK

3.1 The scope of work covered in this Tender shall be as per the Bill of Quantities, Specifications, Drawings, Instructions, Orders issued to the Contractor from time to time during the pendency of work. The Drawings for this work, which may be referred for tendering, provide general idea only about the work to be performed under the scope of this contract. These may not be the final drawings and may not indicate the full range of the work under the scope of this contract. The work will be executed according to the Drawings to be released as “GOOD FOR CONSTRUCTION” from time to time by the Engineer-In-Charge of EPI and according to any additions/ modifications/ alterations/deletions made from time to time, as required by any other drawings that would be issued to the Contractor progressively during execution of work. It shall be the responsibility of the Contractor to incorporate the changes that may be in the scope of work, envisaged at the time of tendering and as actually required to be executed.

3.2 The quantities of various items as entered in the “BILL OF QUANTITIES” are indicative only and may vary depending upon the actual requirement. The Contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items specified in the Bill of Quantities. The variation of quantities will be governed as per clause No.69 of GCC.

4.0 VALIDITY OF TENDER

The Tender for the works shall remain open for acceptance for a period of ninety days from the date of opening of Price Bid of Tenders. The earnest money will be forfeited without any prejudice to any right or remedy, in case the Contractor withdraws his Tender during the validity period or in case he changes his offer to his benefits, which are not acceptable to EPI. The validity period may be extended on mutual consent.

5.0 ACCEPTANCE OF TENDER

EPI reserves to itself the authority to reject any or all the Tenders received without assigning any reason. The acceptance of a Tender shall be effective w.e.f. the date on which the telegram/ letter of intent or acceptance of the Tender is put in the communication by EPI. EPI also reserves the right to split the work
among two or more parties at lowest negotiated rate without assigning any reason thereof. The Contractor is bound to accept the portion of work as offered by EPI after split up at the quoted/negotiated rates.

6.0 SET OF TENDER DOCUMENTS:

The following documents will complete a set of Tender Documents.

A) VOLUME I:

a) Instructions to tenderers
b) General Conditions of Contract

B) VOLUME II:

a) Notice Inviting Tenders
b) Additional Conditions of Contract
c) Technical Specifications (General, Additional & Technical specifications)
d) Tender Drawings

C) VOLUME III:

a) Schedule of Rates/Bills of quantities (Price-Bid)

7.0 EARNEW MONEY DEPOSIT

Earnest Money Deposit (EMD) of amount as mentioned in “Memorandum” to “Form of Tender” required to be submitted along with the Tender shall be in the form of Demand Draft payable at place as mentioned in “Notice Inviting Tender”/ “Instructions to Tenderers” in favour of ‘Engineering Projects (India) Limited’ from any Nationalised bank / Scheduled Bank or in the form of Bank Guarantee from any Nationalised bank / Scheduled Bank as per the enclosed format. The EMD shall be valid for minimum period of 150 days (One hundred fifty Days) from last day of submission of Tender.

7.1 EMD shall accompany the offer and placed in the sealed envelope cover of the offer as detailed in Instructions to Tenderer. Any tender not accompanied with the requisite Earnest Money Deposit alongwith ‘Letter of Undertaking’ shall be rejected and such tenderer(s) will not be allowed to attend the opening of bids.

7.2 The EMD of all unsuccessful tenderers (i.e. except evaluated lowest tenderer) shall be returned within Seven (7) days of the opening of price bids by EPI. Subject to clause 7.6 herein below, EMD of successful tenderer shall be refunded after submission of Security Deposit cum Performance Guarantee by him.

7.3 Once the tenderer has given an unconditional acceptance to the tender conditions in its entirety, he is not permitted to put any remark(s)/conditions(s) (except unconditional rebate on price, if any) in/along-with the Tender.

7.4 In case the condition 7.3 mentioned above is found violated at any time after opening of Tender, the Tender shall be summarily rejected and EPI shall, without
prejudice to any other right or remedy, be at liberty to forfeit the full said Earnest Money absolutely.

7.5 No interest will be payable by EPI on the said amount covered under EMD/Other security documents.

7.6 EMD of successful tenderer, if deposited in the form of Demand Draft, shall be treated as part of Retention Money.

7.7 At any time after the due date of the Tender, if any tenderer alters /modifies/withdraws his tender within the validity period (or the extended validity period) of his tender or fails to furnish the “Security Deposit cum Performance Guarantee” or the “Additional Performance Guarantee” or fails to execute the “Contract Agreement” within the prescribed time period after the placement of LOI on him, EPI without prejudice to any other rights or remedies shall be at liberty to forfeit the Earnest Money deposited by the tenderer. In the event of re-tender, such tenderer shall not be allowed to submit tender

8.0 MOBILIZATION ADVANCE

8.1 Mobilization advance up to maximum of amount as mentioned in the “Memorandum” to the “Form of Tender” shall be paid to the Contractor on submission of non-revocable and unconditional Bank Guarantee of an equivalent amount in case of interest free Mobilization Advance or for an amount equal to 110% of the Mobilization Advance in case of interest bearing Mobilization Advance, from a Nationalized Bank / Scheduled Bank as per the enclosed Performa subject to conditions given hereunder. The Mobilization Advance shall be at the Interest Rate as mentioned in the “Memorandum” to the “Form of Tender”. This advance shall be paid in three installments as follows:

i) First Installment of fifty percent of total mobilization advance shall be paid after fulfillment of the following conditions:

   a) Signing of the agreement.
   b) Submission of Security Deposit cum Performance Guarantee as per Clause No. 9.

ii) Second installment of twenty five percent of total mobilization advance will be paid after the setting up of site office and providing facilities to EPI as per contract, and completion of enabling works required for taking up the construction. These include construction of store, labour hutments, etc.

iii) The balance twenty five percent of total mobilization advance shall be paid on mobilization of manpower, plant & equipment etc. to the satisfaction of Engineer-In-Charge of EPI.

8.2 The Advance shall be recovered on monthly installment basis. The installments shall commence when 20% of the scheduled contract period has elapsed and fully recovered when 80% of the scheduled contract period is over, both from
date of start. (The month of start & completion of recovery of mobilization advance to be rounded off to nearest full month).

8.3 Part ‘Bank Guarantees’ (BGs) against mobilization advance shall be furnished in as many numbers as the number of recovery installments as given in “Memorandum” to the “Form of Tender” and should be equivalent to the amount of each recovery installment. At any point of time, if the Contractor's payable amount on account of work done is not available with EPI or the amount payable is less than the recovery installment, recovery of such advance shall be effected by encashing the BG of equivalent recovery amount. The decision of EPI in this regard shall be final and binding on the Contractor. The validity period for the part BGs shall be till three months after the end of the month in which instalment is due to be recovered with further three months claim period.

8.4 In case recovery of Mobilization Advance is delayed, interest shall be charged @12% (Twelve percent) per annum on delayed recoveries due to late submission of bills by the Contractor or due to delayed encashment of Bank Guarantee, as stated above or due to any other reasons whatsoever.

8.5 Contractor is required to furnish the Utilization Certificate for each installment of mobilization advance to the satisfaction of Engineer-In-Charge. Subsequent installments of mobilization advance shall be released only after getting satisfactory utilisation certificate from the Contractor for the earlier released installment.

8.6 Notwithstanding what is contained in aforesaid clauses, no mobilization advance whatsoever shall be payable, if payment of mobilization advance is not mentioned in the “Memorandum” to the “Form of Tender”.

9.0 SECURITY DEPOSIT CUM PERFORMANCE GUARANTEE

“Within 10 (ten) days from the date of issue of letter of Intent or within such extended time as may be granted by EPI in writing, the Contractor shall submit to EPI a Security Deposit cum Performance Bank Guarantee in the form appended, from any Nationalised bank / Scheduled Bank equivalent to 5% (five percent only) of the Contract Value for the due and proper execution of the contract. This bank guarantee shall remain valid up to 90 (ninety) days after the end of defects liability period.

In case the Contractor fails to submit the Security Deposit cum Performance Guarantee of the requisite amount within the stipulated period or extended period, letter of intent will stand withdrawn and EMD of Contractor shall be forfeited.

9.1 ADDITIONAL PERFORMANCE GUARANTEE FOR EXISTING CONTRACTORS

In case bidder is a working Contractor of EPI at the time of issuance of Letter of Intent (LOI) for the work, the bidder has to furnish an additional Performance Guarantee of 1% (One Percent) of the Contract Value of the work, in case working capacity of the bidder is less than the aggregate of balance work-load of all the works of the bidder with EPI as on date of placement of LOI for this work. The balance workload shall also include the value of work awarded but not yet
started and finally approved value of this work. This additional Performance Guarantee shall be in addition to the Security Deposit cum Performance Guarantee of the works to be furnished by the bidder as specified in the clause no. 9 of General Conditions of Contract. Further, no relaxation in Security Deposit cum Performance Guarantee as in clause no. 9 of General Conditions of Contract shall be made in case working capacity works-out to be more than the balance value of works as mentioned above. The working capacity of the Contractor shall be calculated as under:

\[
\text{WORKING CAPACITY} = 2.5 \times \text{(Average Turnover of the party as per latest three audited Balance Sheets)}. 
\]

NOTE: The decision of amount of additional Performance Guarantee as above shall be taken by EPI and shall be final & binding to the Contractor.

In case the Contractor fails to submit the additional performance guarantee of the requisite amount within 10 days from the date of issue of letter of Intent or within such extended time as may be granted by EPI in writing, the letter of intent will stand withdrawn and EMD of the Contractor shall be forfeited.

9.2 ABNORMALLY HIGH AND LOW RATED ITEMS

For item rate tenders if, the rates quoted by the lowest bidder for certain items of the Bill of Quantities of the Tender are found to be abnormally high or low in comparison to the Market Rate analysis of the item done by EPI and/or in comparison to EPI's method of working out market rate justification for the items, the same shall be governed as under: -

For Abnormally High Rated items (AHR), the progressive payment shall be 80% (Eighty percent) of the payment due to the Contractor against execution of the AHR items. The balance withheld 20% (twenty percent) payment shall be released after 80% of total value of the original contract is completed in financial terms in order to ensure that the Abnormally Low Rated (ALR) items identified at the time of Award of work have been executed as per requirement of project and as per terms of Contract. Further, deviation limit for AHR items shall be nil on plus side and 100% on minus side. The provision of deviation limit of clause 69.1(v) shall not apply to AHR items. In case of deviation of quantities given in schedule of quantities for AHR items on plus side, the same shall be governed by clause 69.2. The decision of Engineer-In-Charge of EPI in this regard shall be final and binding on the Contractor.

The provision of para 9.2 shall not be applicable on tenders invited on Percentage Rate/lump Sum basis.
The decision of EPI on identification/marking of AHR and ALR items is final and binding on the Contractor. In case the Contractor does not agree to the identified AHR and ALR items, at the time of award of works, the EMD/Security Deposit cum Performance Guarantee of the Contractor shall be forfeited and decision of EPI in this regard shall be final & binding on the Contractor.

10.0  RETENTION MONEY

The Retention Money shall be deducted from each running bill of the Contractor at 5% (five percent only) of the gross value of the Running Account bill. The Earnest Money Deposited by the tenderer in the form of Demand Draft will be treated as part of the Retention Money. The Retention Money shall be refunded to the Contractor after expiry of defects liability period (referred to in Clause No. 74) or on payment of the amount of the final bill whichever is later. If the amount of Retention Money deduction in cash is more than Rs.10.00 lakhs (Rupees Ten lakhs only), the excess amount can be refunded to Contractor against submission of Bank Guarantee of equivalent amount from a Nationalised bank / Scheduled Bank in the prescribed proforma of Performance Guarantee of EPI.

11.0  MOBILIZATION OF MEN, MATERIALS AND MACHINERY:

11.1 All expenses towards mobilization at Site and de-mobilization including bringing in equipment, work force, materials, dismantling the equipments, clearing the Site etc. shall be deemed to be included in prices quoted and no separate payment on account of such expenses shall be entertained.

11.2 It shall be entirely the Contractor’s responsibility to provide, operate and maintain all necessary construction equipments, scaffoldings and safety gadget, lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all jobs as per the specifications and within the schedule time of completion of work. Further, Contractor shall also be responsible for obtaining temporary electric and water connection for all purposes. The Contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

11.3 It shall be the responsibility of the Contractor to obtain the approval for any revision and/ or modification desired by him from EPI before implementation. Also such revisions and/or modifications if accepted / approved by EPI shall be carried at no extra cost to EPI.

11.4 The procurement and supply in sequence and at the appropriate time of all materials and consumable shall be entirely the Contractor’s responsibility and his rates for execution of work shall be inclusive of supply of all these items.
11.5 It is mandatory for the Contractor to provide safety equipments and gadgets to its all workers, supervisory and Technical staff engaged in the execution of the work while working. The minimum requirement (but not limited to) shall be gumboots, safety helmets, Rubber hand gloves, facemasks, safety nets, belts, goggles etc. as per work requirements. Sufficient nos. of these equipments and gadgets shall also be provided to EPI by the Contractor at his own cost for use of EPI Officials and/or workforce while working/supervision at Site. No staff/worker shall be allowed to enter the Site without these equipments/gadgets. The cost of the above equipments/gadgets are deemed to be included in the rates quoted by the Contractor for the items & works as per Bill of Quantities and Contractor shall not be entitled for any extra cost in these regard. The above norm is to be strictly complied with at Site. In case the Contractor is found to be deficient in providing Safety Equipments/Gadgets in the opinion of Engineer-In-Charge, the Engineer-In-Charge at his option can procure the same at the risk & cost of Contractor and provide the same for the use of worksite and shall make the recoveries from the bills of the Contractor for the same. The decision of the Engineer-In-Charge shall be final and binding on Contractor in this regard.

11.6 All Designs, Drawings, Bill of Quantities, etc. (except Bar Bending Schedule, Shop & Fabrication Drawings) for all works shall be supplied to the Contractor for all buildings services and development works by EPI in phased manner as the works progress. However it shall be the duty and responsibility of the Contractor to bring to the notice of EPI in writing as to any variation, discrepancy or any other changes required and to obtain revised drawings and designs and/or approval of EPI in writing for the same.

11.7 One copy of contract documents including Drawings furnished to the Contractor shall be kept at the Site and the same shall at all reasonable times be available for inspection.

11.8 All materials, construction plants and equipments etc. once brought by the Contractor within the project area, will not be allowed to be removed from the premises without the written permission of EPI. Similarly all enabling works built by the Contractor for the main construction undertaken by him, shall not be dismantled and removed without the written authority of EPI.

11.9 Contractor shall have to prepare the Bar Bending Schedule, Shop and Fabrication Drawings free of cost, if required for any of the items of work. Five copies of these Drawings each including for revision will be submitted to EPI for approval. Before executing the item, Bar Bending Schedule, Shop & Fabrication Drawings should be got approved from EPI.

12.0 INCOME TAX DEDUCTION

Income tax deductions shall be made from all payments made to the Contractor including advances against work done, in accordance with the Income Tax act prevailing from time to time.
13.0 TAXES AND DUTIES

13.1 The Contractor shall be responsible for the payment, wherever payable, at his own cost of all taxes such as excise duty, custom duty, sales tax, including the purchase tax, consignment tax, work contract tax, service tax, VAT or any other similar tax in the state concerned, turnover tax, toll tax, octroi charges, royalty, cess, levy and other tax (es) or duty (ies) which may be specified by local/ state/ central government from time to time on all materials, articles which may be used for this work. The rates quoted by him in the Tender in Bill of Quantities shall be inclusive of all such taxes, duties, etc. The imposition of any new and/ or increase in the aforesaid taxes, duties, levies (including fresh imposition of Work Contract Tax, Turnover Tax, Sales Tax on Work Contract, VAT or any other similar Tax) etc. during the currency of the contract shall be borne by Contractor and shall not be paid or reimbursed to the Contractor by EPI. In the event of non-payment/default in payment of any octroi, royalty, cess, turnover tax, sales tax, including the purchase tax, consignment tax, work contract tax, VAT, Service Tax or any other similar tax in the state concerned, customs, excise or any other levy/tax including labour dues etc. by Contractor, EPI reserves the right to withhold the dues/ payments of Contractor and make payment to local/state/ Central Government authorities or to labourers as may be applicable. The Contractor should submit along with the Tender Registration Certificates with Sales Tax on works contract authority etc. other wise appropriate recovery shall be made from his bills.

13.2 The rate quoted by the Contractor shall be deemed to be inclusive of all Taxes and duties as mentioned in clause no.13.1 given above or any other tax as applicable and the same shall not be reimbursed by EPI. Tax deductions at source shall be made as per laws prevalent in the State.

13.3 The stamp duty and registration charges, if any, on the contract agreement levied by the Government or any other statutory body, shall be paid by the Contractor.

13.4 It will be incumbent upon the Contractor to obtain a registration certificate as a dealer under the Local Sales Tax Act and the Central Sales Tax Act, Service Tax, etc. and necessary evidence to this effect shall be furnished by the Contractor to EPI. Sales Tax on the transactions between the Contractor and his Sub-Contractor/Vendors etc. shall be borne by the Contractor. The Contractor shall be responsible for any taxes that may be levied hereunder on the transaction between Contractor and EPI.

13.5 The bidder shall quote his rates inclusive of Turnover Tax/ Sales Tax on Works Contract payable to State Govt. along-with other taxes, duties, levies etc. in conjunction with other terms and conditions. In case, the Turnover Tax/ Sales Tax on Works Contract on execution of works is waived off by the State Govt. at later stage for this project, the equivalent amount from the date of waiver of such tax (as per prevailing rate as on the date of waiver of Turnover Tax/ Sales Tax on Works Contract) shall be deducted from the amount payable to the Contractor from subsequent RA Bills.
13.6 **VALUE ADDED TAX (VAT)**

The consideration agreed for the execution of said contract shall include the taxes, duties, cess, etc. such as excise duty, service tax, VAT, which is leviable or may be levied in future under any State Law or the Central Law on execution of said contract, such taxes shall be borne by the Contractor and shall not be reimbursed by EPI. Further, if due to any variance in such tax, duties, cess etc. there is any increase in the taxes, the same shall also be borne by the Contractor. Where under any of the State or the Central Law, there is requirement of deduction of tax at source, the same shall be deducted from the amount paid or payable to the Contractor pursuant to this contract and shall be deposited to the Government authorities by EPI. EPI shall issue the documents/forms/ certificate as prescribed under the relevant law, in respect of the amount so deducted from the amount paid or payable to the Contractor. EPI shall have full rights to withhold the amount payable to the Contractor in pursuant to this contract, if Contractor does not fulfill his obligation under any State or Central Law relating to execution of said contract, in case the amount has already been paid by EPI, EPI has the right to recover such payments from the Contractor.

14.0 **ROYALTY ON MATERIALS:**

The Contractor shall deposit royalty and obtain necessary permit for supply of bajri, stone, kankar, sand, etc. from the local authorities and quoted rates shall be inclusive of royalty.

15.0 **RATES TO BE FIRM**

15.1 The rates quoted by the tenderer shall be firm and fixed for the entire period of completion and till handing over of the work. No revision to rates or any escalation shall be allowed on account of any increase in prices of materials, labour, POL and Overheads etc or any other statutory increase during the entire contract period or extended contract period.

15.2 The Contractor shall be deemed to have inspected the Site, its surrounding and acquainted itself with the nature of the ground, accessibility of the Site and full extent and nature of all operations necessary for the full and proper execution of the contract, space for storage of materials, construction plant, temporary works, restrictions of working time, restrictions on the plying of heavy vehicles in area, supply and use of labour, materials, plant, equipment and laws, rules and regulations, if any, imposed by the local authorities.

15.3 The rates and prices to be tendered in the Bill of Quantities are for completed and finished items of works complete in all respects. It will be deemed to include all construction plant, labour, supervision, materials, transport, all temporary works, erection, maintenance, Contractor’s profit and establishment/ overheads, together with preparation of designs & drawings pertaining to casting yard, shop drawing, fabrication drawing (if required), staging form work, stacking yard, etc. all general risk, taxes, royalty, duties, cess, octroi and other levies, insurance,
liabilities and obligations set out or implied in the Tender Documents and contract.

15.4 Unless otherwise specified in the Bill of Quantities (BOQ), the Contractor has to make his own arrangement for dewatering/ bailing out of water, effluent including strutting, shoring etc at every stage of work wherever required (including Tunnel work) including working under foul condition as per direction of Engineer-In-Charge at his own cost and the Contractor shall not be entitled for any extra payment, whatsoever, in this regard.

15.5 If required to make work site suitable for execution, Contractor shall have to clear jungle including of rank vegetation, grass, trees etc., clear & clean existing drains/ canals (including strutting, shoring and packing cavities) and dispose them out of the Site up-to any lead and lift as per direction of Engineer-In-Charge. The Contractor should inspect the Site of work from this point of view. Unless otherwise specified in the Bill of Quantities, the cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the Contractor shall not be entitled for any extra payment in this regard.

15.6 If any temporary/ permanent structure is encountered or safety of such structure in the vicinity is endangered due to execution of the project, the Contractor has to protect the structures by any means as per direction of Engineer - in – Charge. If any damage caused to any temporary or permanent structure(s) in the vicinity is caused due to execution of the project, the Contractor has to make good the same by any means as per direction of Engineer - in – Charge. The Contractor should inspect the Site of work from this point of view. The cost to be incurred in this regard shall be deemed to be included in his quoted rates of BOQ items and the Contractor shall not be entitled for any extra payment in this regard.

16.0 ESCALATION / PRICE VARIATION

No claim on account of any Price Variation / Escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ)/Price-Bid quoted by Contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation/price variation clause shall be applicable on this contract.

17.0 INSURANCE OF WORKS ETC.

Contractor is required to take Contractor’s All Risk Policy or Erection All Risk Policy (as the case may be) including Marine Insurance from an Approved Insurance Company in the joint name with EPI and bear all costs towards the same for the full period of execution of works including the defect liability period for the full amount of contract against all loss or damage from whatever cause arising for which he is responsible under the terms of the contract and in such manner that EPI and the Contractor are covered during the period of construction of works and/or also covered during the period of defect liability for the loss or damage as under:

a. The work and the temporary works to the full value of such works.
b. The materials, construction plant, centering, shuttering and scaffolding materials and other things brought to the Site for their full value. Whenever required by EPI, the Contractor shall produce the policy or the policies of insurance and the receipts for payment of the current premiums.

18.0 INSURANCE UNDER WORKMEN’S COMPENSATION ACT

Contractor is required to take insurance cover as per requirement of the Workmen’s Compensation Act, 1923 amended from time to time from an Approved Insurance Company and pay premium charges thereof. Wherever required by EPI the Contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

19.0 THIRD PARTY INSURANCE

Contractor is required to take third party insurance cover for an amount of 5% (five percent) of Contract Value from an Approved Insurance Company for insurance against any damage, injury or loss which may occur to any person or property including that of EPI, arising out of the execution of the works or temporary works. Wherever required by EPI the Contractor shall produce the policy or the policies of Insurance and the receipt of payment of the current premiums.

In case of failure of the Contractor to obtain insurance for works, insurance under Workman Compensation Act and Third Party insurance as described above within one month from the date of commencement of work, running account payments of the Contractor shall be withheld till such time the aforesaid insurance covers are obtained by the Contractor.

20.0 INDEMNITY AGAINST PATENT RIGHTS

The Contractor shall fully indemnify EPI from and against all claims and proceedings for or on account of any infringement of any patent rights, design, trademark or name or other protected rights in respect of any construction plant, machine, work or material used for in connection with the works or temporary works.

21.0 LABOUR LAWS TO BE COMPLIED WITH BY THE CONTRACTOR

The Contractor shall obtain a valid licence under the contract labour (Regulation & Abolition) Act 1970 and the Contract Labour Act (R&A) Central Rules 1971 and amended from time to time, and continue to have a valid licence until the completion of the work including defect liability period. The Contractor shall also abide by the provision of the child labour (Prohibition and Regulation) Act. 1986 and as amended from time to time. Any failure to fulfill this requirement shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.
The Contractor shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act, 1948, Employer's Liability Act, 1938, Workmen's Compensation Act, 1923, Maternity Benefit Act, 1961 and Mines Act -1932, Industrial Disputes Act, 1947 or any modifications thereof or any other law relating thereto and rules made there under from, time to time.

21.1 No labour below the age of 18 years shall be employed on the work.

22.0 LABOUR SAFETY PROVISION

The Contractor shall be fully responsible to observe the labour safety provisions.

23.0 OBSERVANCE OF LABOUR LAWS

23.1 The Contractor shall be fully responsible for observance of all labour laws applicable including local laws and other laws applicable in this matter and shall Indemnify and keep indemnified EPI against effect of non observance of any such laws. The Contractor shall be liable to make payment to all its employees, workers and sub-Contractors and make compliance with labour laws. If EPI or the Client/ Owner/ Employer is held liable as “Principal Employer” to pay any amount or contributions etc. under legislation of Govt. or Court decision in respect of the employees of the Contractor, then the Contractor would reimburse the amount of such payments, contribution etc. to EPI and/ or same shall be deducted from the payments, Retention Money etc. of the Contractor.

23.2 The Contractor shall submit proof of having valid EPF registration certificate. In absence of the said certificate payment to the extent of 4.70% (four point seven percent) of the value of all the Running Account bills may be withheld by EPI and shall be released only after the production of the EPF registration certificate from the concerned authorities. If it is incumbent upon EPI to deposit withheld amount with EPF authorities, the withheld amount shall be deposited by EPI with EPF authorities. In such a case EPI shall not refund this withheld amount to the Contractor even after the production of EPF registration certificate.

23.3 The Contractor shall be liable to pay cess levied under the Building and other Construction Workers Welfare Cess Act, 1996, at such rates as may be notified by the Government from time to time. EPI shall deduct at source from every Running Account Bill of the Contractor, the said cess, at such rates for the time being prevailing, which shall not exceed 2% (two percent) but not be less than 1% (one percent) of the cost of construction incurred by EPI.

24.0 LAWS GOVERNING THE CONTRACT

This contract shall be governed by the Indian Laws for the time being in force and amended from time to time.

25.0 LAWS, BYE LAWS RELATING TO THE WORK

The Contractor shall strictly abide by the provisions, for the time being in force, of law relating to works or any regulations and bye laws made by any local authority or any water & lighting agencies or any undertakings within the limits of the
jurisdiction of which the work is proposed to be executed. The Contractor shall be bound to give to the authorities concerned such notices and take all approvals as may be provided in the law, regulations or bye laws as aforesaid, and to pay all fees and taxes payable to such authorities in respect thereof.

26.0 EMPLOYMENT OF PERSONNEL

26.1 The Contractor shall employ only Indian Nationals as his representatives, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no personnel of doubtful antecedents & integrity and any other nationality in any way are associated with the works.

26.2 EPI shall have full power to get removed immediately any representative, agent, servant and workmen or employees of the Contractor on account of misconduct, negligence or incompetence or whose continued employment may in the opinion of the Engineer-In-Charge be undesirable without assigning any reason for the removal. The Contractor shall not be allowed any compensation on this account whatsoever.

27.0 TECHNICAL STAFF FOR WORK

27.1 The Contractor shall employ at his cost the adequate number of technical staff during the execution of this work depending upon the requirement of work. For this purpose the numbers to be deployed, their qualification, experience as decided by EPI shall be final and binding on Contractor. The Contractor shall not be entitled for any extra payment in this regard. The technical staff should be available at Site, whenever required by EPI to take instructions.

27.2 Within 15 days from the date of letter of intent, the Contractor shall submit a site organizational chart and Resume including details of experience of the Project-in-Charge and other staff proposed by him and shall depute them on the Project after getting approval from Engineer-In-Charge. If desired by the Contractor at later date, the Project-in-Charge and other staff whose resume is approved by EPI can be replaced with prior written approval of EPI and replacement shall be with equivalent or superior candidate only. Decision of Engineer-In-Charge shall be final and binding on the Contractor.

Even after approving the site organizational chart, the Engineer-In-Charge due to nature and exigency of work can direct the Contractor to depute such additional staff as in view of Engineer-In-Charge is necessary and having qualification and experience as approved by the Engineer-In-Charge. The removal of such additional staff from the Site shall only be with the prior written approval of Engineer-In-Charge. The Contractor shall not be paid anything extra whatsoever on account of deployment of additional staff and decision of the Engineer-In-Charge shall be final and binding on the Contractor.

27.3 In case the Contractor fails to employ the staff as aforesaid, he shall be liable to pay a reasonable amount not exceeding a sum of Rs. 25,000 (Rupees Twenty Five Thousand only) for each month of default in the case of each person. The
decision of the Engineer-In-Charge as to number of Technical Staff to be adequate for the project and the period for which the required technical staff was not employed by the Contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the Contractor.

28.0 LAND FOR LABOUR HUTS/ SITE OFFICE AND STORAGE ACCOMMODATION

28.1 The Contractor shall arrange the land for temporary office, storage accommodation and labour huts at his own cost and get the clearance of local authorities for setting up of labour camp and cost of same is deemed to be included in the rates quoted by the Contractor for the works. The Contractor shall ensure that the area of labour huts is kept clean and sanitary conditions are maintained as laid down by the local authorities controlling the area. The labour huts shall be so placed that it does not hinder the progress of work or access to the worksite. The vacant possession of the land used, for the purpose shall be given back by Contractor after completion of the work. The Retention Money of the Contractor shall be released only after Contractor demolishes all structures including foundations and gives back clear vacant possession of this land.

28.2 In the event the Contractor has to shift his labour camp at any time during execution of the work on the Instructions of local authorities or as per the requirement of the work progress or as may be required by EPI, he shall comply with such instructions at his cost and no claim whatsoever shall be entertained on this account.

28.3 FURNISHED OFFICE ACCOMMODATION & MOBILITY AND COMMUNICATION TO BE PROVIDED BY CONTRACTOR TO EPI

On acceptance of Tender, the Contractor at his own cost will construct a suitable furnished office at Site equipped with basic facilities such as telephone(s), fax, internet, photocopier, computer(s) & printer(s) along with operator(s), regular electricity & drinking water supply and vehicles for staff etc. as per the requirement of the project. The Contractor shall provide consumable as required and maintain the aforesaid facilities intact/operational during the currency of the contract including the defects liability period. The Contractor shall also make sufficient arrangement for photography/ videography preferably by maintaining a camera/video camera at Site so that photographs video can be taken of any specific activity at any point of time. The Contractor shall also provide software like MS Project etc. for the purpose of preparing progress report, etc.

28.4 The Contractor shall make all arrangements for ground breaking ceremony/ inaugural function etc for the project as required and the cost towards it is deemed to be included in his rates/offer. Any expenditure already incurred/to be incurred by EPI, shall be recovered from the Contractor.

28.5 PROTECTION OF TREES

Trees designated by the Engineer-In-Charge shall be protected from damage during the course of the works and earth level within one meter of each such tree shall not
be changed. Where necessary, such trees shall be protected by providing temporary fencing.

29.0 **WATCH & WARD AND LIGHTING**

The Contractor shall at his own cost take all precautions to ensure safety of life and property by providing necessary barriers, lights, watchmen etc. during the progress of work as directed by Engineer-In-Charge.

30.0 **HEALTH & SANITARY ARRANGEMENTS**

In case of all labour directly or indirectly employed in work for the performance on the Contractor’s part of this contract, the Contractor shall comply with all rules and regulations framed by Govt. from time to time for the protection of health and sanitary arrangements for workers.

31.0 **WORKMEN’S COMPENSATION ACT**

The Contractor shall at all times indemnify EPI and Owner against all claims for compensation under the provision of Workmen’s Compensation Act, 1923 or any other law in force, for any workmen employed by the Contractor or his sub-Contractor in carrying out the contract and against all costs and expenses incurred by EPI therewith.

32.0 **MINIMUM WAGES ACT**

The Contractor shall comply with all the provisions of the Minimum Wages Act, 1948, Contract Labour Act (R&A) 1970, and rules framed thereunder and other labour laws/local laws affecting contract labour that may be brought into force from time to time.

33.0 **LABOUR RECORDS**

The Contractor shall submit by the 4th & 19th of every month to the Engineer-In-Charge of EPI a true statement, showing in respect of the second half of the preceding month and the first half of the current month, respectively, of the following data :-

a) The number of the labour employed by him (category-wise).

b) Their working hours.

c) The wages paid to them.

d) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused.
e) The number of female workers who have been allowed Maternity Benefits under the Maternity Benefit Act, 1962 and the amount paid to them.

f) Any other information required by Engineer-In-Charge.

34.0 RELEASE OF RETENTION MONEY AFTER LABOUR CLEARANCE

Retention Money of the work shall not be refunded till the Contractor produces a clearance certificate from the concerned Labour Officer. As soon as the work is virtually complete, the Contractor shall apply for the clearance certificate to the concerned Labour Office under intimation to the Engineer-In-Charge. The Engineer-In-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the Contractor in respect of the work. If no complaint is pending, on record till three months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Retention Money will be released if otherwise due.

35.0 SECURED ADVANCE AGAINST NON-PERISHABLE MATERIALS

Interest free secured advance up to a maximum of 75% (seventy five percent) of the Market Value of the materials or the cost of materials as derived from the tendered item rate of the Contractor, whichever is less, required for incorporation in the permanent works and brought to Site and duly certified by EPI Site Engineer shall be paid to the Contractor for all non-perishable items as per CPWD/MORTH (as the case may be) norms. The advance will be paid only on submission of Indemnity Bond in the prescribed pro-forma. The advance shall be recovered in full from next Running Account bill and fresh advance paid for the balance quantities of materials. The Contractor shall construct suitable godown at the Site of work for safe storage of the materials against any possible damages due to sun, rain, dampness, fire, theft etc. at his own cost. He shall also employ necessary watch & ward establishment for the purpose at his costs and risks. Such secured advance shall be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-In-Charge provided the Contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer-In-Charge shall be final and binding on the Contractor in this matter. No secured advance shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

36.0 MEASUREMENTS OF WORKS

36.1 Unless otherwise mentioned in the Bill of Quantities the measurements of works shall be done as per CPWD/MORTH specifications (as specified in Technical Specification of the Tender) and if the same is not given in the CPWD/MORTH Specifications, the same shall be measured as per latest relevant BIS codes in force. The quantity of steel reinforcement and the structural steel sections incorporated in the work shall be measured & paid on the basis of standard coefficients of sections as per BIS Codes of practice.
36.2 The Engineer-In-Charge shall except as otherwise stated ascertain and
determine by measurement the value of work done in accordance with the
contract.

36.3 All items having financial value shall be entered in Measurement Book, level
book, etc. prescribed by EPI so that a complete record is obtained of all work
performed under the contract. Items of non-financial value (which are not
payable) may also be entered in Measurement Book at the sole discretion of the
Engineer-In-Charge.

36.4 Measurements shall be taken jointly by the Engineer-In-Charge or his authorized
representative and by the Contractor or his authorized representative.

36.5 Before taking measurements of any work the Engineer-In-Charge or the
authorized person deputed by him for the purpose shall give a reasonable notice
to the Contractor. If the Contractor fails to attend or send an authorized
representative for measurement after such a notice or fails to countersign or to
record the objection within a week from the date of measurement, then in any
such event measurement taken by the Engineer-In-Charge or by the person
deputed by him shall be taken to be correct measurements of the work.

36.6 The Contractor shall, without extra charge provide assistance with every
appliance, labour and other things necessary for measurement.

Measurements shall be signed and dated by both parties each day on the Site on
completion of measurement.

37.0 PAYMENTS

37.1 The bill shall be submitted by Contractor each month on or before the date fixed
by the ENGINEER-IN-CHARGE for all works executed in previous months. The
Contractor shall prepare computerized bills using the program as approved by
Engineer-In-Charge as per prescribed format/ pro-forma. The Contractor shall
submit five numbers of hard copies and one soft copy of floppy/ CD for all bills.
Subject to clause 37.3 herein below, the payment due to the Contractor shall be
made within fifteen days of getting the measurements verified from the Engineer-
In-Charge or his subordinate/ representative and certification of bill by the
Engineer-In-Charge.

37.2 All running payments shall be regarded as ‘on account’ payments against the
final payment only and not as payments for work actually done and completed
and / or accepted by EPI and shall not preclude the recovery for bad, unsound
and imperfect or unskilled work to be removed and taken away and
reconstructed or re-erected or be considered as an admission of the due
performance of the Contract, or any part thereof, in this respect, or the accruing
of any claim, nor shall it conclude, determine or affect in any way the powers of
EPI under these conditions or any of them as to the final settlement and
adjustments of the accounts or otherwise, or in any other way vary/ affect the
contract. The final bill shall be submitted by the Contractor within three months of
the completion of work, otherwise EPI’s certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on Contractor. Each Running Bill should be accompanied by two sets of at-least 20 (twenty) photographs as per direction of Engineer-In-Charge taken from various points depicting status of work as on Report/ Bill date along with Monthly Progress Report for the concerned month in the pro-forma to be given/ approved by Engineer-In-Charge. Intermittent progress photographs as and when required shall also be provided by the Contractor at his own cost as per direction of Engineer-In-Charge. No payment of running account bill shall be released unless it is accompanied by progress photographs and Monthly Progress Report as above.

37.3 It is clearly agreed and understood by the Contractor that notwithstanding anything to the contrary that may be stated in the agreement between EPI and the Contractor, the Contractor shall become entitled to payment only after EPI has received the corresponding payment(s) from the Client/ Owner for the work done by the Contractor. Any delay in the release of payment by the Client/ Owner to EPI leading to delay in the release of the corresponding payment by EPI to the Contractor shall not entitle the Contractor to any compensation/ interest from EPI.

37.4 All payments shall be released by EPI by Account Payee Cheque from any of its offices in India directly at the address notified by the Contractor (Postage charges shall be charged to the Contractor’s account). In case of Payments is made by Demand Draft at the request of the Contractor, Bank Commission charges shall be debited to the account of Contractor.

38.0 WORK ON SUNDAYS, HOLIDAYS AND DURING NIGHT

For carrying out work on Sunday and Holidays or during night, the Contractor will approach the Engineer-In-Charge or his representative at least two days in advance and obtain his permission. The Engineer-In-Charge at his discretion can refuse such permission. The Contractor shall have no claim on this account whatsoever. If work demand, the Contractor shall make arrangements to carry out the work on Sundays, Holidays and in two, three shifts with the approval of Engineer-in-Charge at no extra cost to EPI.

39.0 NO IDLE CHARGES TOWARDS LABOUR OR PLANT & MACHINERY ETC.

No idle charges or compensation shall be paid for idling of the Contractor's labour, staff or Plant & Machinery etc. on any ground or due to any reason whatsoever. EPI will not entertain any claim in this respect.

40.0 WORK TO BE EXECUTED IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, ORDERS, ETC.

The Contractor shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The Contractor shall also conform exactly, fully and faithfully to the Design, Drawings and Instructions.
in writing in respect of the work assigned by the Engineer-In-Charge and the Contractor shall be furnished free of charge one copy of the Contract Documents together with Specifications, Designs, Drawings.

The Contractor shall comply with the provisions of the contract and execute the works with care and diligence and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

41.0 DIRECTION FOR WORKS

41.1 All works to be executed under the contract shall be executed under the direction and subject to approval in all respect of the Engineer-In-Charge of EPI who shall be entitled to direct at what point or points and in what manner works are to be commenced and executed.

41.2 The Engineer-In-Charge and his representative shall communicate or confirm their instructions to the Contractor in respect of the execution of work during their Site inspection in a ‘Works Site Order Book’ maintained at the site office of Engineer-In-Charge. The Contractor or his authorized representative shall confirm receipt of such instructions by signing against the relevant orders in the book. The Contractor shall be bound to sign the site order book as and when required by Engineer-In-Charge and carry out compliance of instructions promptly to the satisfaction of Engineer-In-Charge.

42.0 ORDER OF PRECEDENCE OF DOCUMENTS

42.1 In case of difference, contradiction, discrepancy, dispute with regard to Conditions of Contract, Specifications, Drawings, Bill of Quantities and Rates quoted by the Contractor and other documents forming part of the contract, the following shall prevail in order of precedence.

i) Contract Agreement
ii) Fax, Telegram or Letter of Intent, detailed letter of Work Order along with statement of agreed variations and its enclosures.
iii) Description in Bill of Quantity / Schedule of Quantities
iv) Additional Conditions of Contract.
v) Technical specifications (General / Special Technical Specification) as given in the Tender Documents.
vi) General Conditions of Contract.
vii) Drawings
viii) CPWD/ MORTH specifications (as specified in Technical Specification of the Tender) update with correction slips issued up to last date of receipt of Tenders.
42.2 If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer-In-Charge shall be the deciding authority with regard to the intention of the document which shall be final and binding on the Contractor.

42.3 Any error in description, quantity or rate in the Schedule of Quantities/items or Bill of Quantities or any omission there from shall not vitiate the contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to the Drawings and Specifications or from any of his obligations under the contract.

43.0 TIME SCHEDULE & PROGRESS

43.1 Time allowed for carrying out all the works as entered in the Tender shall be as mentioned in the “Memorandum” to the “Form of Tender” which shall be reckoned from the 10th day from the date on which the letter/telegram of Intent is issued to the Contractor. Time shall be the essence of the contract and Contractor shall ensure the completion of the entire work within the stipulated time of completion.

43.2 The Contractor shall also furnish within 10 days from the date of letter/telegram of Intent, a CPM network/PERT chart/Bar Chart for completion of work within stipulated time. This will be duly got approved from EPI. This approved Network/PERT Chart shall form a part of the agreement. Achievement of milestones as well as total completion has to be within the time period allowed.

43.3 Contractor shall mobilize and employ sufficient resources for completion of all the works as indicated in the agreed BAR CHART/Network. No additional payment will be made to the Contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Engineer-In-Charge.

43.4 During the currency of the work the Contractor is expected to adhere to the time schedule on milestones and total completion and this adherence will be a part of Contractor’s performance under the contract. During the execution of the work Contractor is expected to participate in the review and updating of the Network/BAR CHART undertaken by EPI. These reviews may be undertaken at the discretion of EPI either as a periodical appraisal measure or when the quantum of work order on the Contractor is substantially changed through deviation orders or amendments. The review shall be held at Site or any of the offices of EPI/Owner or Consultant of EPI/Owner at the sole discretion of EPI.

43.5 If at any time, it appears to the Engineer-In-Charge that the actual progress of work does not conform to the approved programme referred above, the Contractor shall produce a revised programme showing the modifications to the approved programme by additional inputs to ensure completion of the work within the stipulated time. The Contractor will adhere to the revised schedule thereafter. The approval to the revised schedule resulting in a completion date beyond the
stipulated date of completion shall not automatically amount to a grant of extension of time to the Contractor.

43.6 Contractor shall submit fortnightly/ Monthly (as directed by Engineer-In-Charge) progress reports (5 copies) on a computer based program (program and software to be approved by Engineer-In-Charge) highlighting status of various activities and physical completion of work.

43.7 The Contractor shall send completion report along with as built drawings and maintenance schedule to the office of Engineer-In-Charge, of EPI in writing within a period of 30 days of completion of work.

44.0 WATER AND ELECTRICITY

The Contractor shall make his own arrangement for Water & Electrical power for construction and other purposes at his own cost and pay requisite electricity and water charges. The Contractor shall also make standby arrangement for water & electricity to ensure un-interrupted supply.

45.0 MATERIALS TO BE PROVIDED BY THE CONTRACTOR

The Contractor shall, at his own expense, provide all materials, required including Cement & Steel for the works.

The Contractor shall at his own expense and without delay, supply to the Engineer-in-Charge samples of materials to be used on the work and shall get the same approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The Contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-In-Charge that the materials so comply.

The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-In-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the Contractor shall afford every facility and every assistance and cost in obtaining the right and visit to such access.

The Engineer-In-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-In-Charge shall be at liberty to employ at the expense of the Contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-In-Charge shall also have full power to require other proper materials to be substituted thereof and in case of default, the Engineer-In-Charge may cause the same to the supplies and all
costs which may require such removal and substitution shall be borne by the Contractor.

45.1 CEMENT AND CEMENT GODOWN

Cement shall be procured by Contractor of 43 Grade conforming to BIS : 8112 Specification latest edition or higher Grade as directed by the Engineer-In-Charge. The cement shall be procured directly from the reputed manufacturers/stockist, which will have to be got approved from EPI in advance. Relevant vouchers and test certificates will be produced as and when required. The cement shall be stored by the Contractor in such suitable covered and lockable stores, well protected from climate and atmospheric effect. The cement godown shall be constructed by the Contractor as per CPWD specifications at his own cost. The cement will remain under double lock, one from EPI and other from Contractor. The cement in bags shall be stored in godowns in easy countable position. Cement bags shall be used on first in first out basis. Cement stored for beyond 90 days will be required to be tested at Contractors cost, before use in works.

45.2 STEEL & STEEL STOCKYARD

Steel conforming to BIS specifications (latest edition) shall be procured by the Contractor directly from reputed manufacturers/producers as approved by EPI. The manufacturer has to give a certificate that the material supplied is not a re-rolled product. Relevant vouchers & test certificates will be produced by the Contractor. Re-rolled sections will not be allowed.

Reinforcement steel, structural steel shall be stored and stacked in such manner so as to facilitate easy identification, removal etc. The Contractor shall take proper care to prevent direct contact between the steel and the ground/ water for which he shall provide necessary arrangement at his own cost including ensuring proper drainage of area to prevent water logging as per directions of the Engineer-In-Charge. If required, the reinforcement steel shall also be protected, by applying a coat of neat cement slurry over the bars for which no extra payment shall be made.

Test certificates for each consignment of steel shall be furnished and tests to be got carried out by the Contractor at his own cost from the authorized laboratory as per the directions of Engineer-In-Charge, before incorporating the materials in the work.

46.0 SCHEDULE OF QUANTITIES / BILL OF QUANTITIES

46.1 The quantities shown against the various items of work are only approximate quantities, which may vary as per the actual requirement at Site.

46.2 All items of work in the Bill of Quantities/ schedule of quantities shall be carried out as per the CPWD/ MORTH (as the case may be) specifications, drawings and instructions of the ENGINEER-IN-CHARGE of EPI and the rates shall include for supply of required materials including proper storage, consumables, skilled & unskilled labour, supervision, tools, tackles, plant & machinery complete
as called for in the detailed specifications and conditions of the contract. No item, which is not covered in the Bill of Quantities, shall be executed by the Contractor without the approval of EPI. In case any Extra/Substituted item is carried out without specific-approval, the same will not be paid.

47.0 ANTI-TERMITE TREATMENT & WATER PROOF TREATMENT

47.1 Pre-construction treatment shall be carried out in co-ordination with the building work and shall be executed in such a manner that the civil works are not hampered or delayed by the anti-termite treatment. The treatment shall be carried out as detailed in BIS: 6313 (Part-II) latest revision. The waterproof treatment shall be of type and specifications as given in the schedule of quantities.

47.2 The treatment against water-proofing of basement, roofs, water retaining areas and termite infestation shall be and remain fully effective for a period of not less than 10(Ten) years to be reckoned from the date of expiry of the Defect Liability period, prescribed in the contract. At any time during the said guarantee period if EPI finds any defects in the said treatment or any evidence of re-infestation, dampness, leakage in any part of buildings or structure and notifies the Contractor of the same, the Contractor shall be liable to rectify the defect or give re-treatment at his own cost and shall commence the work or such rectification or re-treatment within seven days from the date of issue of such letter to him. If the Contractor fails to commence such work within the stipulated period, EPI may get the same done by another agency at the Contractor’s cost and risk and the decision of the Engineer-In-Charge of EPI for the cost payable by the Contractor shall be final and binding upon him.

47.3 Re-treatment if required shall be attended to and carried out by the Contractor within seven days of the notice from Engineer-In-Charge of EPI.

47.4 EPI reserves the right to get the quality of treatment checked in accordance with recognized test methods and in case it is found that the chemicals with the required concentration and rate of application have not been applied, or the water proof treatment is not done as per specifications, the Contractor will be required to do the re-treatment in accordance with the required concentration & specifications at no extra cost failing which no payment for such work will be made. The extent of work thus rejected shall be determined by EPI.

47.5 Water proofing and anti-termite treatment shall be got done through approved / specialized agencies only with prior approval of Engineer-In-Charge.

47.6 The Contractor shall make such arrangement as may be necessary to safeguard the workers and residents of the building against any poisonous effect of the chemicals used during the execution of the work.

47.7 During the execution of work, if any damage shall occur to the treatment already done, either due to rain or any other circumstances, the same shall be rectified and made good to the entire satisfaction of Engineer-In-Charge by the Contractor at his cost.
47.8 The Contractor shall make his own arrangement for all equipments required for the execution of the job.

47.9 The Contractor shall execute Guarantee Bond in the prescribed form as appended for guaranteeing the anti-termite treatment and waterproof treatment.

48.0 INDIAN STANDARDS

Wherever any reference is made to any IS in any particular specifications, Drawings or Bill of Quantities, it means the Indian Standards editions with the amendments current at the last date of receipt of Tender Documents.

49.0 CENTERING & SHUTTERING

Marine plywood only or steel plates of minimum thickness as approved by Engineer-In-Charge shall be used for formwork. The shuttering plates shall be cleaned and oiled after every repetition and shall be used only after obtaining approval of EPI's Engineers at Site. The number of repetitions allowed for plywood and steel shuttering shall be at the discretion of Engineer-In-Charge of EPI depending upon the condition of shuttering surface after each use and the decision of ENGINEER-IN-CHARGE in this regard shall be final and binding on the Contractor. No claim whatsoever on this account shall be admissible.

50.0 CONTROLLED MATERIALS

50.1 The following Controlled materials shall be brought to Site after the approval of EPI.
   a) Water proofing compound.
   b) Cement
   c) Steel
   d) Primer/ Paints/ Varnish etc.
   e) Bitumen
   f) Chemical for anti termite treatment
   g) Any other materials as per discretion of EPI.

50.2 The quantity of Controlled materials shall be measured and recorded in the Measurement books and signed by the Contractor and the Engineer-In-Charge as a check to ensure that the required quantities as required for execution of works as per specifications have been brought to Site for incorporation in the work.

50.3 Controlled materials brought at Site shall be stored as directed by EPI and those already recorded in Measurement book, shall be suitably marked for identification.

50.4 The Contractor shall ensure that the Controlled materials are brought to Site in original sealed containers or packing bearing manufacturer’s markings and
brands (except where the quantity required is a fraction of the smallest packing). Materials not complying with this requirement shall be rejected. The empty containers of such Controlled materials shall not be destroyed/ disposed-off without the written permission of EPI.

50.5 The Contractor shall produce receipted vouchers showing quantities of the materials to satisfy Engineer-In-Charge that the materials comply with the specifications. These vouchers shall be endorsed, dated and initialed by Engineer-In-Charge giving the contract number and name of work and a certified copy of each such voucher signed both by EPI and the Contractor shall be kept on record.

50.6 When the cost of each category of materials is less than Rs.5000/- production of vouchers may not be insisted upon if EPI is otherwise satisfied with the quality and quantity of materials.

51.0 RECORDS OF CONSUMPTION OF CEMENT & STEEL

51.1 For the purpose of keeping a record of cement and steel received at Site and consumption in works, the Contractor shall maintain a properly bound register in the form approved by EPI, showing columns like quantity received and used in work and balance in hand etc. This register shall be signed daily by the Contractor’s representative and EPI’s representative.

51.2 The register of cement & steel shall be kept at Site in the safe custody of EPI’s Engineer during progress of the work. This provision will not, however, absolve the Contractor from the quality of the final product.

51.3 In case cement or steel quantity consumed is lesser as compared to the theoretical requirement of the same as per CPWD/MORTH (as the case may be) specifications/ norms, the work will be devalued and/ or a penal rate (i.e. double the rate at which cement/ steel purchased last) recovery for lesser consumption of cement/ steel shall be made in the item rates of the work done subject to the condition that the tests results fall within the acceptable criteria as per CPWD/MORTH (as the case may be) specifications otherwise the work shall have to be dismantled and redone by the Contractor at no extra cost.

In case of cement, if actual consumption is less than 98% of the theoretical consumption, a recovery shall be effected from the Contractor’s dues at the penal rate for the actual quantity that is lower than 98% of theoretical consumption.

52.0 MATERIALS AND SAMPLES

52.1 The materials/ products used on the works shall be one of the approved make/ brands out of list of manufacturers/ brands/ makes given in the Tender Documents. The Contractor shall submit samples/ specimens out of approved makes of materials/ products to the Engineer-In-Charge for prior approval. In
exceptional circumstances Engineer-In-Charge may allow alternate equivalent makes/brands of products/materials at his sole discretion. The final choice of brand/make shall remain with the Engineer-In-Charge, whose decision in this matter shall be final and binding and nothing extra on this account shall be payable to the Contractor.

In case single brand/make is mentioned, other equivalent makes/brands may be considered by the Engineer-In-Charge with prior approval. In case of variance in CPWD/IS/BIS Specifications from approved products/makes specification, the specification of approved product/make shall prevail for which nothing shall be paid extra to the Contractor.

In case no make or brand of any materials, articles, fittings and accessories etc. is specified, the same shall comply with the relevant Indian Standard Specifications and shall bear the ISI/BIS mark. The Engineer of EPI and the Owner shall have the discretion to check quality of materials and equipments to be incorporated in the work, at source of supply or site of work and even after incorporation in the work. They shall also have the discretion to check the workmanship of various items of work to be executed in this work. The Contractor shall provide the necessary facilities and assistance for this purpose.

52.2 The above provisions shall not absolve the Contractor from the quality of final product and in getting the material and workmanship quality checked and approved from the Engineer-In-Charge of EPI.

52.3 The Contractor shall well in advance, produce samples of all materials, articles, fittings, accessories etc. that he proposes to use and get them approved in writing by EPI. The materials articles etc. as approved shall be labelled as such and shall be signed by EPI and the Contractor’s representative.

52.4 The approved samples shall be kept in the custody of the Engineer-In-Charge of EPI till completion of the work. Thereafter the samples except those destroyed during testing shall be returned to the Contractor. No payment will be made to the Contractor for the samples or samples destroyed in testing.

52.5 The brands of all materials, articles fittings etc. approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the Site Order Book.

52.6 The Contractor shall set up and maintain at his cost, a field testing laboratory for all day-to-day tests at his own cost to the satisfaction of the Engineer-In-Charge. This field testing laboratory shall be provided with equipment and facilities to carry out all mandatory field tests as per CPWD/MORTH (as the case may be) specifications. The laboratory building shall be constructed and installed with the appropriate facilities; Temperature and humidity controls shall be available wherever necessary during testing of samples.

All equipments shall be provided by the Contractor so as to be compatible with the testing requirements specified. The Contractor shall maintain all the equipments in good working condition for the duration of the contract.
The Contractor shall provide approved qualified personnel to run the laboratory for the duration of the Contract. The number of staff and equipment available must at all times be sufficient to keep pace with the sampling and testing programme as required by the Engineer-In-Charge.

The Contractor shall fully service the site laboratory and shall supply everything necessary for its proper functioning, including all transport needed to move equipment and samples to and from sampling points on the Site, etc.

The Contractor shall re-calibrate all measuring devices whenever so required by the Engineer-In-Charge and shall submit the results of such measurements without delay.

All field tests shall be carried out in the presence of EPI’s representative. All costs towards samples, materials, collection, transport, manpower, testing, including concrete mix-design etc. shall be borne by the Contractor and are deemed to be included in the rates quoted by him in the Bill of Quantities.

53.0 TESTS AND INSPECTION

53.1 The Contractor shall carry out the various mandatory tests as per specifications and the technical documents that will be furnished to him during the performance of the work. All the tests on materials, as recommended by CPWD, MORTH (as the case may be) and relevant Indian Standard Codes or other standard specifications (including all amendments current at the last date of submission of Tender Documents) shall be got carried out by the Contractor at the field testing laboratory or any other recognized institution/ laboratory, at the direction of EPI. All testing charges, expenses etc. shall be borne by the Contractor. All the tests, either on the field or outside laboratories concerning the execution of the work and supply of materials shall be got carried out by the Contractor or EPI at the cost of the Contractor.

53.2 WORKS TO BE OPEN TO INSPECTION

All works executed or under the course of execution in pursuance of this contract shall at all times be open to inspection and supervision of EPI. The work during its progress or after its completion may also be inspected, by Chief Technical Examiner of Government of India (CTE) and/or an inspecting authority of State Government of State in which work is executed and/or by third party checks by Owner/ Clients. The compliance of observations/ improvements as suggested by the inspecting officers of EPI/CTE/ State authorities/ Owners shall be obligatory on the part of the Contractor at the cost of Contractor.

54.0 BORROW AREAS

The Contractor shall make his own arrangements for borrow pits and borrow disposal areas including their approaches and space for movement of men, machinery, other equipments as required for carrying out the works. The Contractor shall be responsible for taking all safety measures, getting approval,
making payment of royalties, charges etc. and nothing extra shall be paid to the Contractor on this account and unit rates quoted by the Contractor for various items of Bill of Quantities shall be deemed to include the same.

55.0 BITUMEN WORK

The Contractor shall be responsible for arranging Bitumen/Tar of required grade from source to be approved by the Engineer-In-Charge. No Bitumen work shall be carried out on wet surface or in rainy conditions.

56.0 CARE OF WORKS

From the commencement to the completion of works and handing over, the Contractor shall take full responsibility for care of all the works and in case of any damage/loss to the works or to any part thereof or to any temporary works due to lack of precautions or due to negligence on part of Contractor, the same shall be made good by the Contractor at his own cost.

57.0 WORK IN MONSOON AND DEWATERING

The execution of the work may entail working in the monsoon also. The Contractor must maintain labour force as may be required for the job and plan and execute the construction and erection according to the prescribed schedule. No special/extra rate will be considered for such work in monsoon. The Contractor’s rate shall be considered inclusive of cost of dewatering required, if any and no extra rate shall be payable on this account.

58.0 NO COMPENSATION FOR FORECLOSURE/CANCELLATION/REDUCTION OF WORKS

If at any time after the commencement of the work EPI shall for any reason whatsoever is required to abandon the work or does not require the whole work thereof as specified in the Tender to be carried out, the Engineer-In-Charge shall give notice in writing of the fact to the Contractor, who shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full, but which he did not derive in consequence of the full amount of the work not having been carried out or on foreclosure, neither shall he have any claim for compensation by reason of any alterations having been made in the original Specifications, Drawings, Designs and Instructions which shall involve any curtailment of the work as originally contemplated.

Provided that the Contractor shall be paid the charges on the cartage only of materials actually and bonafide brought to the Site of the work by the Contractor and rendered surplus as a result of the abandonment or curtailment of the work or any portion thereof and then taken back by the Contractor, provided however, that the Engineer-In-Charge shall have in all such cases the option of taking over all or any such materials at their purchase price or at local current rates whichever may be less. In the case of such stores having been issued by EPI
and returned by the Contractor to EPI, credit will be given to him by the Engineer-In-Charge at rates not exceeding those at which they were originally issued to him after taking into consideration any deduction for claims on account of any deterioration or damage while in the custody of the Contractor and in this respect the decision of the Engineer-In-Charge shall be final.

59.0 RESTRICTION ON SUBLETTING

59.1 The Contractor shall not sublet or assign the whole or part of the works except where otherwise provided, by the contract and even then only with the prior written consent of EPI and such consent if given shall not relieve the Contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults or neglects of any sub-Contractor, his agents, servants or workmen as full as if they were the acts, defaults or neglects of the Contractor, his agent, servants or workmen provided always that the provision of labour on piece work basis shall not be deemed to be a subletting under this clause.

59.2 The Contractor may entrust specialist items of works to the agencies specialized in the specific trade. The Contractor shall give the names and details of such firm whom he is going to employ for approval of EPI. These details shall include the expertise, financial status, technical manpower, equipment, resources and list of works executed and on hand of the specialist agency. Specialist agency shall be engaged only after obtaining written approval of the Engineer-In-Charge.

60.0 PROHIBITION OF UNAUTHORISED CONSTRUCTION & OCCUPATION

No unauthorized buildings, structures should be put up by the Contractor anywhere on the project Site, neither any building built by him shall be unauthorisedly occupied by him or his staff.

61.0 CO-ORDINATION WITH OTHER AGENCIES

Work shall be carried out in such a manner that the work of other Agencies operating at the Site is not hampered due to any action of the Contractor. Proper Co-ordination with other Agencies will be Contractor's responsibility. In case of any dispute the decision of EPI shall be final and binding on the Contractor. No claim whatsoever shall be admissible on this account.

62.0 SETTING OUT OF THE WORKS

62.1 The Contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the works. If at any time during the progress of works, shall any error appear or arise in the position, levels, dimensions or alignment of any part of the works, the Contractor shall at his own expenses rectify such error to the satisfaction of Engineer-in-charge. The checking of any setting out or of any line or level by the engineers of EPI shall not in any way relieve the Contractor of his responsibility for the correctness.
62.2 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural, Plumbing and other services Drawings.

63.0 NOTICE BEFORE COVERING UP THE WORK

The Contractor shall give not less than seven days notice before covering up or otherwise placing beyond the reach of measurement any work, to the Engineer-In-Charge in order that the same may be inspected and measured. If any work is covered up or placed beyond the reach of Inspection/ measurement without such notice to the Engineer-In-Charge or his consent being obtained, the same shall be uncovered at the Contractors expenses and he shall have to make it good at his own expenses.

64.0 SITE CLEARANCE

64.1 The Contractor shall ensure that the working Site is kept clean and free of obstructions for easy access to job Site and also from safety point of view. Before handing over the work to EPI the Contractor shall remove all temporary structures like the site offices, cement godown, stores, labour hutments etc., scaffolding rubbish, left over materials tools and plants, equipments etc., clean and grade the Site to the entire satisfaction of the Engineer-In-Charge. If this is not done the same will be got done by EPI at his risk and cost.

64.2 The Contractor shall clean all floors, remove cement/ lime/ paint drops and deposits, clean joinery, glass panes etc., touching all painter’s works and carry out all other necessary items of works to make the premises clean and tidy before handing over the building, and the rates quoted by the Contractor shall be deemed to have included the same.

65.0 VALUABLE ARTICLES FOUND AT SITE

All gold, silver and other minerals of any description and all precious stones, coins, treasure, relics, antiques and all other similar things which shall be found in, under or upon the Site, shall be the property of the Owner/ Government and the Contractor shall duly preserve the same to the satisfaction of Engineer-In-Charge and shall from time to time deliver the same to such person or persons indicated by EPI.

66.0 MATERIALS OBTAINED FROM DISMANTLEMENT TO BE OWNER’S PROPERTY

All materials like stone, boulders and other materials obtained in the work of dismantling, excavation etc. will be considered Owner/ government property and may be issued to the Contractor by the Owner/ EPI, if required for use in this work at rates approved by EPI or the Contractor may be asked to dispose off these items at his cost.

67.0 SET-OFF OF CONTRACTOR’S LIABILITIES

EPI shall have the right to deduct or set off the expenses incurred or likely to be incurred by it in rectifying the defects and/or any claim under this agreement
against the Contractor from any or against any amount payable to the Contractor under this agreement including Retention Money and proceeds of Security Deposit cum Performance Guarantee and from any other contract being executed by the Contractor for EPI.

68.0 MATERIALS PROCURED WITH THE ASSISTANCE OF EPI

If any material for the execution of this contract is procured with the assistance of EPI either by issue from its stores or purchase made under orders or permits or licences obtained by EPI, the Contractor shall hold and use the said materials economically and solely for the purpose of this contract and shall not dispose them without the written permission of Engineer-In-Charge. The Contractor, if required by EPI, shall return all such surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination on whatsoever reason, on being paid or credited such price as EPI shall determine having due regard to the conditions of materials.

69.0 ALTERATION IN SPECIFICATION, DESIGN & DRAWING

69.1 The Engineer-In-Charge shall have power to make any alterations in, omissions from, additions to or substitutions for, the original Specifications, Drawings, Designs and Instructions that may appear to him to be necessary during the progress of the work, and the Contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-In-Charge and such alterations, omissions, additions, or substitutions shall not invalidate the contract and any altered, additional or substituted work which the Contractor may be directed to do in the manner above specified as part of the work shall be carried out by the Contractor on the same conditions in all respects on which he agreed to do the main work.

The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work price bears to the original contract work price, and the certificate of the Engineer-In-Charge shall be conclusive as to such proportion. Over and above this, a further period to the extent of 25 percent of such extension shall be allowed to the Contractor.

The rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order:

i) If the rates for the additional, altered or substituted work are specified in the contract for the work, the Contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.

ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a nearest similar item of work as are specified in the contract for the work. In case of composite tenders where two or more
iii) If the altered, additional or substituted work includes any work for which no rate is specified in the contract for the work and which cannot be derived in the manner specified in sub para (i) and (ii) above from the similar class of work in the contract then such work shall be carried out at the rates entered in the Schedule of Rates (as mentioned in “Memorandum” to the “Form of Tender” for Civil/ Sanitary Works) minus/plus the percentage which the tendered amount of scheduled items bears with the estimated amount of schedule items based on the Schedule of Rates (as mentioned in “Memorandum” to the “Form of Tender” for Civil/ Sanitary Works). The scheduled items mean the items appearing in the Schedule of Rates (as mentioned in “Memorandum” to the “Form of Tender” for Civil/ Sanitary Works), which shall be applicable in this clause. This clause will apply mutatis mutandis to electrical work except that Electrical Schedule of Rates as mentioned in “Memorandum” to the “Form of Tender” will be considered in place of Civil/ Sanitary works Schedule of rates as mentioned in “Memorandum” to the “Form of Tender”.

iv) If the rates for the altered, additional or substituted work cannot be determined in the manner specified in sub-clauses (i) to (iii) above, then the Contractor shall, within 7 days of the date of receipt of order to carry out the work, inform the Engineer-In-Charge the rates which he intends to charge for such class of work, supported by analysis of the rate or rates claimed, and the Engineer-In-Charge shall determine the rate or rates on the basis of prevailing market rates of the material, Labour, T&P etc. plus 10% (Ten percent) to cover the Contractors supervision, overheads and profit and pay the Contractor accordingly. The opinion of the Engineer-In-Charge as to the current market rates of materials and quantum of labour involved per unit of measurements will be final and binding on the Contractor.

However, the Engineer-In-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner, as he may consider advisable. But under no circumstances, the Contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

v) Except in case of items relating to foundations, provisions contained in sub-clauses (i) to (iv) above shall not apply to contract, altered or substituted items as individually exceed the ‘deviation limit’ of plus/minus 25% (Twenty Five Percent) subject to the following:-

(a) Deviation limit shall apply to individual items.
(b) The value of additions of items, of any individual trade not already included in the contract, shall not exceed 20% of the Tendered value of work, subject to overall deviation limit as given above.

Provided further that in case where the original item is substituted, the Substituted Item shall be deemed to have replaced the original item in the contract itself to that extent and above provisions pertaining to the deviations shall apply with respect to such Substituted Item and not the original item.

NOTE: Individual trade means the trade section to which Bill of Quantities annexed to the agreement has been divided or in the absence of any such division the individual section of the MORTH/C.P.W.D. (as the case may be) Scheduled of rates specified above, such as excavation and earthwork, Concrete, wood work and joinery, etc.

The rate of any such work except the items relating to foundations which is in excess of the deviation limit and deviation in quantities of AHR items on plus side as contained in Clause 9.2(i) shall be determined in accordance with the provisions contained in Clause 69.2.

69.2 In the case of contract items, substituted items, Contract cum substituted items or additional items which exceed the limits laid down in sub para (v) of condition 69.1 above (except the items relating to foundation work, which the Contractor is required to do under Clause 69.1 above and deviation in quantities of AHR items on plus side as contained in clause 9.2 (i) ), the Contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis, for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities or those derived in accordance with the provisions of sub para (i) to (iii) of conditions 69.1 by more than five percent, the Engineer-In-Charge shall within three months of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the Contractor, determine the rates on the basis of the market rates and if the rates so determined exceed the rates specified in the schedule of quantities or those derived in accordance with the provisions of sub paras (i) to (iii) of condition 69.1 by more than five percent, the contract shall be paid in accordance with the rates determined. In the event of the Contractor failing to claim revision of rates within the stipulated period, or if the rates determined by the Engineer-In-Charge within the period of three months of receipt of the claims supported by analysis are within five percent of the rates specified in the schedule of quantities or of those determined in accordance with the provisions of sub-para (i) to (iii) of condition 69.1, the Engineer-In-Charge shall make payment at the rates as specified in the schedule of quantities or those already determined under sub para (i) to (iii) of condition 69.1 for the quantities in excess of the limits laid down in sub para (v) of condition 69.1.

69.3 The provisions of the proceeding paragraph shall apply to the decrease in the rates of items for the work in excess of the limits laid down in sub para (v) of
condition 69.1 provided that such decrease is more than five percent of rates specified in the schedule of quantities or those derived in accordance with the provisions of sub para (i) to (iii) of condition 69.1 and the Engineer-In-Charge may after giving notice to the Contractor within two months of receipt of order by the Contractor or occurrence of the excess and after taking into consideration any reply received from him within fifteen days of receipt of the notice revise the rates for the work in question within two months of expiry of the said period of fifteen days having regard to the market rates.

69.4 The Contractor shall send to the Engineer-In-Charge once every three months an up to date account giving complete details of all claims for additional payments to which the Contractor may consider himself entitled and of all additional work ordered by the Engineer-In-Charge which he has executed during the preceding quarter failing which the Contractor shall be deemed to have waived his right.

69.5 For the purpose of operation of clause 69.1 (v) the following works shall be treated as works relating to foundation:-

i) For buildings, compound walls plinth level or 1.2 meters (4 feet) above ground level whichever is lower excluding items of flooring and D.P.C. but including base concrete below the floors.

ii) For abutments, piers, retaining walls of culverts and bridges, walls of water reservoirs the bed of floor level.

iii) For retaining walls where floor level is not determinate 1.2 meters above the average ground level or bed level.

iv) For Roads all items of excavation and filling including treatment of sub base and soiling work.

v) For water supply lines, sewer lines, under-ground storm water drains and similar works. All items of work below ground level except items of pipe work, masonry work.

vi) For open storm water drains, all items of work except lining of drains.

70.0 ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK

If it shall appear to the Engineer-In-Charge or his authorized subordinate in charge of the work or to the Chief Technical Examiner or to any other inspecting agency of Government/ State Government/ Owner where the work is being executed, that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the Contractor shall on demand in writing which shall be made within six months of the completion of the work from the ENGINEER-IN-CHARGE specifying the work, materials or articles complained of notwithstanding that the same may have been passed, Certified and paid for forthwith rectify, or remove and
reconstruct the work so specified in whole or in part as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-In-Charge in his demand aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent of the estimated amount put to tender for every day not exceeding ten days, while his failure to do so shall continue and in the case of any such failure, the Engineer-In-Charge may rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and expense in all respects of the Contractor.

71.0 POSSESSION PRIOR TO COMPLETION

71.1 EPI shall have the right to take possession of or use any completed or partially completed work or part of the work. Such possession or use shall not be deemed to be any acceptance of any work not completed in accordance with the contract agreement. If such prior possession or use by EPI delays the progress of work an equitable adjustment in the time of completion will be made and the contract agreement shall be deemed to be modified accordingly. The decision of EPI in this case shall be final binding and conclusive.

71.2 When the whole of the works or the items or the groups of items of work for which separate periods of completion have been specified have been completed the Contractor will give a notice to that effect to the Engineer in writing. The Engineer shall within 15 days of the date of receipt of such notice inspect the works and either the Engineer-In-Charge issues to the Contractor a completion certificate stating the date on which in his opinion the works were completed in accordance with the contract or gives instructions in writing to the Contractor specifying the balance items of work which are required to be done by the Contractor before completion certificate could be issued. The Engineer-In-Charge shall also notify the Contractor of any defect in the works affecting completion.

71.3 The Contractor shall during the course of execution prepare and keep updated a complete set of 'as built' drawings to show each and every change from the Contract Drawings, changes recorded shall be countersigned by the Engineer-In-Charge and the Contractor. Four copies of 'as built' drawings shall be supplied to EPI by the Contractor within 30 days of the completion. All costs incurred in this respect shall be borne by the Contractor only.

72.0 COMPENSATION FOR DELAY AND REMEDIES

72.1 If the Contractor fails to maintain the required progress in terms of clause 72.4 or relevant clause of Additional Conditions of Contract, to complete the work and clear the Site on or before the completion date or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to EPI on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or such smaller amount as the Engineer in charge (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / week (as
applicable) that the progress remains below that specified in Clause 72.4.1 or the relevant clause in Additional Conditions of Contract or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified.

i) For works with completion period not exceeding 3 month (as originally stipulated) @ 1% per day

ii) For works with completion period exceeding 3 months (as originally stipulated) @ 1% per week or part thereof

Provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with EPI even after completion of the work.

72.2 CANCELLATION / DETERMINATION OF CONTRACT IN FULL OR PART

Subject to other provisions contained in this clause, the Engineer-In-Charge may, without prejudice to his any other rights or remedy against the Contract in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in full or in part in any of the following cases:

i) If the Contractor having been given by the Engineer-In-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or unworkmanlike manner shall omit to comply with the requirement of such notice for a period of seven days thereafter; or

ii) If the Contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the ENGINEER-IN-CHARGE (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-In-Charge; or

iii) If the Contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that respect by the Engineer-In-Charge; or

iv) If the Contractor persistently neglects to carry out his obligations under the contract and/or commits default in complying with any of the terms
and conditions of the contract and does not remedy it or take effective
steps to remedy it within 7 days after a notice in writing is given to him in
that respect by the Engineer-In-Charge; or

v) If the Contractor shall offer or give or agree to give to any person in EPI
service or to any other person on his behalf any gift or consideration of
any kind as an inducement or reward for doing or forbearing to do or for
having done or forborne to do any action in relation to the obtaining or
execution of this or any other contract for EPI; or

vi) If the Contractor shall enter into a contract with EPI in connection with
which commission has been paid or agreed to be paid by him or to his
knowledge, unless the particulars of any such commission and the terms
of payment thereof have been previously disclosed in writing to the
Engineer-In-Charge; or

vii) If the Contractor shall obtain a contract with EPI as a result of wrong
tendering or other non-bona-fide methods of competitive tendering; or

viii) If the Contractor being an individual, or if a firm, any partner thereof shall
at any time be adjudged insolvent or have a receiving order or order for
administration of his estate made against him or shall take any
proceedings for liquidation or composition (other than a voluntary
liquidation for the purpose of amalgamation or reconstruction) under any
Insolvency Act for the time being in force or make any conveyance or
assignment of his effects or composition or arrangement for the benefit of
his creditors or purport so to do, or if any application be made under any
Insolvency Act for the time being in force for the sequestration of his
estate or if a trust deed be executed by him for benefit of his creditors; or

ix) If the Contractor being a company, shall pass a resolution or the Court
shall make an order for the winding up of the company, or a receiver or
manager on behalf of the debenture holders or otherwise shall be
appointed or circumstances shall arise which entitle the Court or
debenture holders to appoint a receiver or manager; or

x) If the Contractor shall suffer an execution being levied on his goods and
allow it to be continued for a period of 21 days; or

xi) If the Contractor assigns, transfers, sublets (engagement of labour on a
piece-work basis or of the labour with materials not to be incorporated in
the work, shall not be deemed to be subletting) or otherwise parts with or
attempts to assign, transfer sublet or otherwise parts with the entire works
or any portion thereof without and prior written approval of the Engineer-
In-Charge.

When the Contractor has made himself liable for action under any of the clauses
aforesaid, the Engineer-In-Charge may without prejudice to any other right or
remedy which shall have accrued or shall accrue hereafter to EPI, by a notice in
writing to cancel the contract as a whole or only such items of work in default from the Contract.

The Engineer-In-Charge shall on such cancellation by EPI have powers to:

a) Take possession of Site and any materials, Construction Plant & machinery, implements, stores, etc. thereon; and/or

b) Carry out the incomplete work by any means at the risk and cost of the Contractor; and/or

c) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the Contractor under the hand of the Engineer-In-Charge shall be conclusive evidence). Upon such determination or rescission the full Retention Money recovered by EPI under the contract and Security Deposit cum Performance Guarantee shall be liable to be forfeited and un-used materials, construction plant & machinery, implements, temporary buildings, etc. shall be taken over and shall be absolutely at the disposal of EPI. If any portion of the Retention Money has not been received or recovered by EPI from RA Bills, it would be called for and forfeited; and/or

d) To employ labour and to supply materials, equipment to carry out the work or any part of the work debiting the Contractor with the cost of the labour and the price of the materials, equipment rentals (of the amount of which cost and price certified by the Engineer-In-Charge shall be final and conclusive) against the Contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the Contractor under the terms of his contract. The certificate of the Engineer-In-Charge as to the value of the work done shall be final and conclusive against the Contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the Contractor. Provided also that if the expenses incurred by the EPI are less than the amount payable to the Contractor at his agreement rates, the difference shall not be paid to the Contractor; and/or

e) After giving notice to the Contractor to measure up the work of the Contractor and to take such whole, or the balance or part thereof as shall be un-executed or delayed with reference to the General Conditions of Contract clause no. 72.4.1 and/or relevant clause of Additional Conditions of Contract, out of his hands and to give it to another Contractor to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original Contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-In-Charge shall be final and conclusive) shall be borne and paid by the original Contractor and may be deducted from any money due to him by EPI under his contract or on any other account whatsoever or from his Retention Money, Security Deposit cum Performance Guarantee or the proceeds of sales of unused materials, construction plants & machinery, implements temporary buildings etc. thereof or a sufficient part thereof as
the case may be. If the expenses incurred by EPI are less than the amount payable to the Contractor at his agreement rates, the difference shall not be paid to the Contractor; and/or

f) By a notice in writing to withdraw from the Contractor any items or items of work as the Engineer-In-Charge may determine in his absolute discretion and get the same executed at the risk and cost of the Contractor.

Any excess expenditure incurred or to be incurred by EPI in completing the works or part of the works or the excess loss or damages suffered or may be suffered by EPI as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to EPI in law be recovered from any moneys due to the Contractor on any account, and if such moneys are not sufficient the Contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the Contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-In-Charge shall have the right to sell any or all of the Contractors unused materials, Construction Plant, machinery, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the Contractor under the contract and if thereafter there be any balance outstanding from the Contractor, it shall be recovered in accordance with the provisions of the contract and law.

Any sums in excess of the amounts due to EPI and unsold materials, Construction Plant etc. shall be returned to the Contractor, provided always that if cost or anticipated cost of completion by EPI of the works or part of the works is less than the amount which the Contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the Contractor.

In the event of anyone or more of the above courses being adopted by the Engineer-In-Charge the Contractor shall have no claim to compensation whatsoever for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid the Contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-In-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified. Provided further that if any of the recoveries to be made, while taking action as per (d) and/or (e) above, are in excess of the Retention Money & Security Deposit cum Performance Guarantee forfeited, these shall be limited to the amount by which the excess cost incurred by the EPI exceeds the Retention Money & Security Deposit cum Performance Guarantee so forfeited.
**72.3 CONTRACTOR LIABLE TO PAY COMPENSATION EVEN IF ACTION NOT TAKEN**

In any case in which any of the powers conferred upon the Engineer-In-Charge by relevant clause thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the Contractor and the liability of the Contractor for compensation shall remain unaffected. In the event of the Engineer-In-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the Contractor, take possession of (or at the sole discretion of the Engineer-In-Charge which shall be final and binding on the Contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-In-Charge) all or any tools, plant, machinery, materials and stores, in or upon the works, or the site thereof belonging to the Contractor, or procured by the Contractor and intended to be used for the execution of the work / or any part thereof, paying or allowing for the same in account at the contract rates, or in the case of these not being applicable, at current market rates to be certified by the Engineer-In-Charge, whose certificate thereof shall be final, and binding on the Contractor and/or direct the Contractor, clerk of the works, foreman or other authorized agent to remove such tools, machinery, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the Contractor failing to comply with any such requisition, the Engineer-In-Charge may remove them at the Contractor’s expense or sell them by auction or private sale on account of the Contractor and his risk in all respects and the certificate of the Engineer-In-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the Contractor.

**72.4 TIME ESSENCE OF CONTRACT & EXTENSION FOR DELAY**

The time allowed for execution of the Works as specified in the terms of contract or the extended time in accordance with these conditions shall be the essence of the contract. The execution of the works shall commence from the 10th Day or such time period as mentioned in letter of Intent after the date on which the Engineer-In-Charge issues written orders to commence the work. If the Contractor commits default in commencing the execution of the work as aforesaid, the Executing Agency shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.

**72.4.1** Within 10 (Ten) days of Letter of Intent, the Contractor shall submit a Time and Progress Chart (CPM/ PERT/ Quantified Bar Chart) and get it approved by the Engineer-In-Charge. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast (mile-stones) of the dates of commencement and completion of various items, trades, sections of the work and may be amended as necessary by agreement between the Engineer-In-Charge and the Contractor within the limitations of time stipulated in the Contract documents, and further to ensure good progress during the execution of the work, the Contractor shall in all cases in which the time allowed for any work exceeds one month (save for
special jobs for which a separate program has been agreed upon) complete 1/8th of the whole of work before 1/4th of the whole time allowed in the contract has elapsed, 3/8th of the work before one half of such time has elapsed and 3/4th of the work before 3/4th of such time has elapsed. The physical report including photographs shall be submitted by the Contractor on the prescribed format & the intervals (not exceeding a month) as decided by the Engineer in Charge. The compensation for delay as per clause 72.1 shall be leviable at intermediate stages also, in case the required progress is not achieved to meet the above time deadlines of the completion period and/or milestones of time and progress chart, provided always that the total amount of Compensation for delay to be paid under this condition shall not exceed 10% (Ten Percent) of the tendered value of work”.

72.4.2 If the work(s) be delayed by:

i) force-majeure or
ii) abnormally bad weather, or
iii) serious loss or damage by fire, or
iv) civil commotion of workmen, strike or lockout, affecting any or the trades employed on the work, or
v) delay on the part of other Contractors or tradesmen engaged by Engineer-In-Charge in executing work not forming part of the Contract, or
vi) non-availability of stores, which are responsibility of EPI or,
ii) non-availability or break down of tools and plant to be supplied or supplied by EPI or,
iii) any other cause which, in the absolute discretion of EPI, is beyond the Contractor’s control,

then, upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-In-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-In-Charge to proceed with the works.

72.4.3 Request for extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired. In any such case EPI may give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Contractor by the Engineer-In-Charge in writing, within 3 months of the date of receipt of such request. Non-application by the Contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-In-Charge and the extension of time so given by the Engineer-In-Charge shall be binding on the Contractor.

73.0 WITHHOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR

73.1 Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the Contractor, EPI shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security,
73.1 If any, deposited by the Contractor and for the purpose aforesaid, EPI shall be entitled to withhold the Retention Money, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Contractor, EPI shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under the same contract or any other contracts pending finalization or adjudication of any such claim.

73.2 It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-In-Charge or EPI will be kept withheld or retained as such by the Engineer-In-Charge or EPI till the claim arising out of or under the contract is determined by the Arbitrator / Competent Court and that the Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a sole proprietor or a partnership firm or a limited company, etc. the Engineer-In-Charge or EPI shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to proprietor /partnership firm/limited company, as the case may be whether in his individual capacity or otherwise.

EPI shall have the right to cause an audit and technical examination of the works and the final bills of the Contractor including all supporting vouchers, abstract, etc. to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the Contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the Contractor shall be liable to refund the amount of over-payment and it shall be lawful for EPI to recover the same from him in the manner prescribed in sub-clause (I) of this clause or in any other manner legally permissible; and if it is found that the Contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by EPI to the Contractor, without any interest thereon whatsoever.

73.3 LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS

Any sum of money due and payable to the Contractor (including the Retention Money & Security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-In-Charge or by EPI against any claim of the Engineer-In-Charge or EPI in respect of payment of a sum of money arising out of or under any other contract made by the Contractor with the Engineer-In-Charge or EPI.

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the Engineer-In-Charge or EPI will be kept withheld or retained as such by the Engineer-In-Charge or EPI or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the Arbitrator or Competent court as the case may be, and that the Contractor shall have no claim for interest or damages whatsoever on this account or on any
other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the Contractor.

74.0 DEFECTS LIABILITY PERIOD

The Contractor shall be responsible for the rectification of defects in the works for a period of twelve months from the date of taking over of the works by the Owner/Client. Any defects discovered and brought to the notice of the Contractor forthwith shall be attended to and rectified by him at his own cost and expense. In case the Contractor fails to carry out these rectifications, the same may without prejudice to any other right or remedy available, be got rectified by EPI at the cost and expense of the Contractor.

75.0 FORCE MAJEURE

Any delay or failure of the performance of either party hereto shall not constitute default hereunder to give rise to any claims for damages, if any to the Extent such delay or failure of performance is caused by occurrences such as Acts of God or the public enemy, expropriation, compliance with any order or request of Government authorities/Courts, acts of war, rebellions, sabotage fire, floods, illegal strikes, or riots (other than Contractor's employees). Only extension of time shall be considered for Force Majeure conditions as accepted by EPI. No adjustment in contract price shall be allowed for reasons of force majeure.

76.0 ARBITRATION

76.1 Before resorting to arbitration as per the clause given below, the parties if they so agree may explore the possibility of conciliation as per the provisions of Part-III of the Arbitration and Conciliation Act. 1996. When such conciliation has failed, the parties shall adopt the following procedure for arbitration:

i) Except where otherwise provided for in the contract, any disputes and differences relating to the meaning of the Specifications, Design, Drawings and Instructions herein before mentioned and as to the quality of workmanship or materials used in the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the Contract, Designs, Drawings, Specifications, Estimates, Instructions, or these conditions, or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the Sole Arbitration of the Chairman and Managing Director (CMD) of Engineering Projects (India) Limited (EPI), or any other person discharging the functions of CMD of EPI and if CMD or such person discharging the functions of CMD of EPI is unable to act, to the sole Arbitration of some other person appointed by CMD of EPI or such other person discharging the functions of CMD of EPI. There will be no objection if the arbitrator so appointed is an employee of Engineering Projects (I) Ltd. However, such an employee shall not have directly dealt with the said Contract or the works there under on behalf of EPI. Such Arbitrator shall be appointed within 30 days of the receipt of letter of invocation of arbitration duly satisfying the requirements of this clause.
ii) If the arbitrator so appointed resigns or is unable or unwilling to act due to any reason whatsoever, or dies, the Chairman & Managing Director aforesaid or in his absence the person discharging the duties of the CMD of EPI may appoint a new arbitrator in accordance with these terms and conditions of the contract, to act in his place and the new arbitrator so appointed may proceed from the stage at which it was left by his predecessor.

iii) It is a term of the contract that the party invoking the arbitration shall specify the dispute / differences or questions to be referred to the Arbitrator under this clause together with the amounts claimed in respect of each dispute.

iv) The Arbitrator may proceed with the arbitration ex-parte, if either party, in spite of a notice from the arbitrator, fails to take part in the proceedings.

v) The work under the contract shall continue as directed by the Engineer-In-Charge, during the arbitration proceedings.

vi) Unless otherwise agreed, the venue of arbitration proceedings shall be at the venue given in the 'Memorandum' to the 'Form of Tender'.

vii) The award of the Arbitrator shall be final, conclusive and binding on both the parties.

viii) Subject to the aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modifications or re-enactment thereof and the Rules made there under and for the time being in force shall apply to the arbitration proceedings and Arbitrator shall publish his Award accordingly.

NOTE

NOTWITHSTANDING ANYTHING CONTAINED HEREINABOVE, THIS CLAUSE SHALL NOT BE APPLICABLE WHERE THE DISPUTE IS BETWEEN EPI AND ANOTHER CENTRAL PUBLIC SECTOR ENTERPRISE OR GOVT. OF INDIA DEPARTMENT, FOR WHICH A SEPARATE ARBITRATION CLAUSE IS PROVIDED VIDE CLAUSE NO. 76.2 GIVEN BELOW :

76.2 ARBITRATION BETWEEN CENTRAL PUBLIC SECTOR ENTERPRISES INTER SE / GOVERNMENT OF INDIA DEPARTMENTS/ MINISTRIES

i) In the event of any dispute or difference relating to the interpretation and application of the provisions of the contract, such dispute or difference shall be referred by either party to the arbitration as per the instructions (Office Memorandums / Circulars) issued by Govt. of India from time to time with regard to arbitration between one Government Department and another, one Government Department and a Public Sector Enterprise and Public Sector Enterprise inter se.

ii). Subject to any amendment that may be carried out by the Government of India from time to time, the procedure to be followed in the arbitration shall be as is
76.3 JURISDICTION

The courts mentioned in the ‘Memorandum’ to the ‘Form of Tender’ alone will have jurisdiction to deal with matters arising from the contract, to the exclusion of all other courts.

77.0 SUSPENSION OF WORKS

(a) The Contractor shall, on receipt of the order in writing of the Engineer-In-Charge, suspend the progress of the works or any part thereof for such time and in such manner, as the Engineer-In-Charge may consider necessary for any of the following reasons:

i) On account of any default on part of the Contractor, or

ii) For proper execution of the works or part thereof for reason other than the default of the Contractor, or

iii) For safety of the works or part thereof.

The Contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-In-Charge.

(b) If the suspension is ordered for reasons (ii) and (iii) in sub-para (a) above, the Contractor shall be entitled to an extension of the time equal to the period of every such suspension plus 25%. No adjustment of contract price will be allowed for reasons of such suspension.

(c) In the event of the Contractor treating the suspension as an abandonment of the contract by EPI, he shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of the work in full but which he could not derive in consequence of the abandonment.

(d) The Contractor shall resume work in all earnestness after suspension has been lifted by EPI.

78.0 TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR

If the Contractor is an individual or a proprietorship concern and the individual or the proprietor dies then unless the Engineer-In-Charge is satisfied that the legal representatives of the individual Contractor or of the proprietor of the proprietary concern and in the case of partnership firm, the surviving partners, are capable of carrying out and completing the contract, the Engineer-In-Charge shall be entitled to cancel the contract as to its incompleted part without EPI being in any
way liable to payment of any compensation to the estate of the deceased Contractor and/or to surviving partners of the Contractor’s firm on account of cancellation of the contract. Such cancellation of Contract shall be with out prejudice to any of the rights & remedies available to the Engineer-In-Charge under the contract. The decision of the Engineer-In-Charge that the legal representatives of the deceased Contractor or the surviving partners of the Contractor’s firm cannot carry out and complete the contract shall be final and binding on the parties.

79.0  CLARIFICATION AFTER TENDER SUBMISSION

Tenderer’s attention is drawn to the fact that during the period, the bids are under consideration, the bidders are advised to refrain from contacting by any means, EPI and/or his employees/ representatives on matters related to the bid under consideration and that if necessary, EPI will obtain clarifications in writing or as may be necessary. The Tender evaluation and process of award of works is done by duly authorized Tender Scrutiny Committee and this committee is authorized to discuss and get clarification from the tenderers.

80.0  ADDENDA/ CORRIGENDA

Addenda/Corrigenda to the Tender Documents may be issued prior to the date of opening of the Tender to clarify or effect modification in specification and/or contract terms included in various Tender Documents. The tenderer shall suitably take into consideration such Addenda/Corrigenda while submitting his tender. The tenderer shall return such Addenda/ Corrigenda duly signed and stamped as confirmation of its receipt and submit alongwith the Tender Document. All Addenda/ Corrigenda shall be signed and stamped on each page by the tenderer and shall become part of the Tender and contract documents.

81.0  QUALITY ASSURANCE PROGRAMME

To ensure that the works/services under the scope of this contract are in accordance with the specifications, the Contractor shall adopt Quality Assurance Programme to control such activities at the necessary points. The Contractor shall prepare and finalize such Quality Assurance Programme within 15 days from letter of intent. EPI shall also carryout quality audit and quality surveillance of systems and procedures of Contractor’s quality control activities. A Quality Assurance Programme of Contractor shall generally cover the following:

a)  His organization structure for the management and implementation of the proposed Quality Assurance Program.
b)  Documentation control system.
c)  The procedure for procurement of materials and source inspection.
d)  System for site controls including process controls.
e)  Control of non-conforming items and systems for corrective actions.
f)  Inspection and test procedure for site activities.
g)  System for indication and appraisal of inspection status.
h)  System for maintenance of records.
i)  System for handling, storage and delivery.
j) A quality plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract.

All the quality reports shall be submitted by the Contractors in the formats appended hereto. Checklist enclosed here in this document shall be followed while carrying out Construction activities (items). If any item is not covered by the Checklist/ Formats appended hereto, the Format for the same may be developed and submitted to Engineer-In-Charge for approval and the same shall be adopted. These filled in formats shall be prepared in two copies and duly signed by representatives of Contractor and EPI. All the costs associated with printing of Formats and testing of materials required as per technical specifications or by Engineer-In-Charge shall deemed to be included in the Contractor’s quoted rates of various items of work in the Schedule/ Bill of Quantities.

82.0 APPROVAL OF TEMPORARY / ENABLING WORKS

The setting and nature of all offices, huts, access road to the work areas, and all other temporary works as may be required for the proper execution of the works shall be subject to the approval of the Engineer-In-Charge.

All the equipments, labour, material including cement, reinforcement and the structural steel required for the enabling/ temporary works associated with the entire Contract-shall have to be arranged by the Contractor only. Nothing extra shall be paid to the Contractor on this account and the unit rates quoted by the Contractor for various items in the Bill of Quantities shall be deemed to include the cost of enabling works.

83.0 CONTRACT COORDINATION PROCEDURES, COORDINATION MEETINGS AND PROGRESS REPORTING

The Contractor shall prepare and finalize in consultation with EPI, a detailed contract coordination procedure within 15 days from the date of issue of Letter of Intent for the purpose of execution of the Contract.

The Contractor shall have to attend all the meetings at any place in India at his own cost with EPI, Owners/ Clients or Consultants of EPI/ Owner/ Client during the currency of the Contract, as and when required and fully cooperate with such persons and agencies involved during these discussions. The Contractor shall not deal in any way directly with the Clients/ Owners or Consultants of EPI/ Owner/ Clients and any dealing/ correspondence if required at any time with Clients/ Owners/ Consultants shall be through EPI only.

During the execution of the work, Contractor shall submit at his own cost detailed Monthly progress report to the Engineer-In-Charge of EPI by 5th of every month. The format of monthly progress report shall be as approved by Engineer-In-Charge of EPI.

84.0 CONTRACT AGREEMENT
The Contractor shall enter into a Contract Agreement with EPI within 10 days of the date of Letter of Intent or within such extended time, as may be granted by EPI. The cost of stamp papers, stamp duty, registration, if applicable on the contract, shall be borne by the Contractor. In case, the Contractor does not sign the agreement as above or does not start the work within 10 days of the issue of letter/telegram of intent, his earnest money is liable to be forfeited and letter of intent consequently will stand withdrawn.

85.0 MANNER OF EXECUTION OF AGREEMENT

i. The agreement as per prescribed Performa as enclosed to the Additional Conditions of Contract shall be signed at the office of EPI within 10 days from the date of issue of Letter of Intent. The Contractor shall provide for signing of the Contract, appropriate Power of Attorney in favour of the authorised representative duly attested by notary Public and the requisite documents/materials. Till a formal contract is prepared and executed, the Letter of Intent read in conjunction with the Bidding Documents will constitute a binding contract.

ii. The agreement will be signed in two originals and three more copies, EPI shall retain the ‘Original’, the Contractor shall be provided with the other signed original and the remaining three copies will be retained by EPI. In case of a dispute of any kind whatsoever, the ‘Original’ retained by EPI alone shall be treated as the ‘Original Agreement’.

iii. The Contractor shall provide free of cost to EPI all the Engineering data, drawings and descriptive materials submitted along with the bid, in at least five (5) copies to form an integral part of the Agreement within seven 7 days after issuing of Letter of Intent.

iv. Subsequent to signing of the Agreement, the Contractor at his own cost shall provide to EPI with at least five (5) true hard bound copies of Agreement along with all the enclosures viz. letter of intent, Tender Documents etc. within thirty (30) days of its signing.

86.0 PURCHASE PREFERENCE TO PUBLIC SECTOR ENTERPRISES

EPI reserves its right to extend Purchase Preference to Central Public Sector Enterprises (CPSEs) as per policy of Government of India, if any, as applicable on this work. The tenderers are requested to go through latest instructions of Government of India on its Purchase Preference Policy for CPSEs before quoting for the Tender.

87.0 CHANGE IN FIRM’S CONSTITUTION TO BE INTIMATED

Where the Contractor is a partnership firm, prior approval in writing of EPI shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership agreement whereunder the partnership firm would have the right to carry out the works hereby undertaken by the Contractor. If prior approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in
contravention of Clause 59.1 hereof and EPI shall be entitled to take action under Clause 72.2 (xi).

88.0 COMPLIANCE WITH ISO PROCEDURES

EPI is an ISO-9001 and ISO-14001 Company. The conditions of the ISO as applicable shall be followed by the Contractor for implementation & maintaining the established procedures of EPI.
LABOUR SAFETY PROVISIONS

1.0 Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1/4 to 1 (1/4 horizontal and 1 vertical).

2.0 Scaffolding or staging more than 3.6m (12 feet) above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3 feet) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

3.0 Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6m (12 feet) above ground level or floor level, they should be closely boarded, should have adequate width & should be suitable fastened as described in (2.0) above.

4.0 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3 feet).

5.0 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 feet) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. for ladder up to and including 3m (10 feet) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm (1 ft.) of length. Uniform step spacing shall not exceed 30 cm (12"). Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of the work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Contractor shall provide all necessary fencing and lights to protect the public from accident, and shall be bound to bear the expenses of defence of every suit, action or other proceeding at law that may be brought by an person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the Contractor, be paid to compensate any claim by any such person.

6.0 EXCAVATION AND TRENCHING

All trenches, 1.2mts.(four feet) or more in depth, shall at all times be supplied with at least one ladder for each 30m. (100 feet) in length or fraction thereof, Ladder shall be extended from bottom of the trench to at least 90 cm (3feet) above the surface of the ground. The sides of the trenches, which are 1.5m. (5feet) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger or sides to collapsing. The excavated materials shall not be placed within 1.5m (5 feet) of the edges of the
trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

7.0 Demolition - Before any demolition work is commenced and also during the progress of the work:

7.1 All roads and open areas adjacent to the work Site shall either be closed or suitably protected.

7.2 No electric cable or apparatus which is likely to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

7.3 All practical steps shall be taken to prevent danger to persons employed from risk or fire or explosion or flooding. No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.

8.0 All necessary personal safety equipments as considered adequate by the Engineer-In-Charge should be kept available for the use of persons employed on the Site and maintained in a condition suitable for immediate use, and the Contractor should take adequate step to ensure proper use of equipment by those concerned- The following safety equipment shall be invariably provided.

8.1 Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

8.2 Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eye shall be provided with protective goggles.

8.3 Those engaged in welding works shall be provided with welder’s protective eye shields.

8.4 Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe interval.

8.5 When workers are employed in sewers and manholes, which are in active use, the Contractors shall ensure that the manhole covers are opened and ventilated at-least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident the public. In addition, the Contractor shall ensure that the following safety measures are adhered to:

a. Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.

b. At least 5 to 6 manholes upstream and down stream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manholes for working inside.

c. Before entry, presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.

d. Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.
e. Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

f. The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

g. No smoking or open flames shall be allowed near the blocked manhole being cleaned.

h. The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

i. Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer In-charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

j. Gas masks with Oxygen Cylinder should be kept at Site for use in emergency.

k. Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air-blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non-sparking gas engines also could be used but they should be placed at least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

l. The workers engaged for cleaning the manholes/ sewers should be properly trained before allowing them to work in the manhole. m. The workers shall be provided with Gumboots or non-sparking shoes, bump helmets and gloves non-sparking tools, safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.

n. Workmen descending a manhole shall try each ladder step or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

o. If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

p. The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-In-Charge regarding the steps to be taken in this regard in an individual case will be final.

8.6 The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting the following precautions should be taken.

8.6.1 No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

8.6.2 Suitable facemasks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scrapped.
8.6.3 Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

8.6.4.1 a. White lead, sulphate or lead work products containing those pigments shall not be used in painting operation except in the form of paste or of paints ready for use.

b. Measures shall be taken whenever required in order to prevent danger arising from the application of paint in the form of spray.

c. Measures shall be taken, whenever practicable to prevent danger arising out of dust caused by dry rubbing down and scrapping.

8.6.4.2 a. Adequate facilities shall be provided to enable working painter to wash during and on cessation of work.

b. Suitable arrangements shall be made to prevent clothing put off during working hours being spoiled by painting materials.

8.6.4.3 a) Cases of lead poisoning and of suspected lead poisoning shall be notified and shall be subsequently verified by a medical man appointed by the competent authorities of the Consultant.

b) EPI may require when necessary a medical examination of workers.

c) Instructions with regard to the special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

9.0 When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provisions should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.

10.0 Use of hoisting machines and tackle including their attachment encourage and supports shall conform to the following standard of conditions.

10.1 a. These shall be of good mechanical construction, sound material and adequate strength and free from patent, defects and shall be kept required in good working order.

b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

10.2 Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in-charge of any hoisting machine including any scaffolding, winch or giving signals to operator.
10.3 In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

10.4 In case of EPI machines, the safe working load shall be notified by the Engineer-In-Charge. As regards Contractor’s machines the Contractor shall notify the safe working load of the machine to the Engineer-In-Charge whenever he brings any machinery to Site of work and get verified by the Engineer-In-Charge.

11.0 Motors gearing, transmission electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguard, hosting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as gloves sleeves and boots as may be necessary, be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.

12.0 All scaffold, ladders, and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

13.0 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place of work spot. The person responsible for compliance of the safety codes shall be named therein by the Contractor.

14.0 To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the Contractor shall be open to inspection by the or their representatives.

15.0 Notwithstanding the above Clauses from (i) to (xiv) there is nothing in these to exempt the Contractor from the operations of any other Act or Rule in force in the Republic of India.
MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS

1.0 APPLICATION

These rules shall apply to all building and construction works in which 20 (twenty) or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the Contractor work is in progress.

2.0 DEFINITION

Work place means a place where twenty or more workers are ordinarily employed or are proposed to be employed in connection with construction work on any day during the period during which the Contractor work is in progress.

3.0 FIRST-AID FACILITIES

3.1 At every work place first aid facilities shall be provided and maintained, so as to be easily accessible during working hours, First-Aid boxes at the rate of not less than one box per 150 contract labour or part thereof ordinarily employed.

3.2 The First-Aid box shall be distinctly marked with a red cross on white ground and shall contain the following equipments:

3.2.1 a) For work places in which number of contract labour employed does not exceed 50, Each First-Aid box shall contain the following equipments:

i) 6 small sterilized dressings.
ii) 3 medium size sterilized dressings.
iii) large size sterilized dressings.
iv) 3 large sterilized burn dressings.
v) 1 (30 ml) bottle containing a two percent alcoholic solution of iodine.
vii) 1 snake-bite lancet.

viii) 1 (30 gms) bottle of potassium permanganate crystals.
ix) 1 pair of scissors.
x) 1 copy of the First-Aid leaflet issued by the Director General, Factory Advise Service & Labour Institutes, Government of India.
xi) 1 bottle containing 100 tablets (each of 5 grams) of aspirin.
xii) Ointment for burns.
xiii) A bottle of suitable surgical antiseptic solution.
3.2.2 For work places in which the number of contract labour exceed 50. Each First-Aid box shall contain the following equipments:

i) 12 small sterilized dressings.
ii) 6 medium size sterilized dressings.
iii) 6 large size sterilized dressings.
iv) 6 large size sterilized burn dressings.
v) 6 (15 gms) packet sterilized cotton wool.
vi) 1 (60 ml.) bottle containing a two percent iodine alcoholic solution.
vii) 1 (60 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
viii) 1 roll of adhesive plaster.
ix) 1 snake – bite lancet.
x) 1 (30 gms.) bottle of potassium permanganate crystals.
xi) 1 pair of scissors.
xii) 1 copy of the First-Aid leaf-let issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
xiii) A bottle containing 100 tablets (each of 5 grams) of aspirin.
xiv) Ointment for burns.
xv) A bottle of suitable surgical antiseptic solution.

3.3 Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.

3.4 Nothing except the prescribed contents shall be kept in the First Aid box.

3.5 The First Aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

3.6 A person in charge of the First-Aid box shall be a person trained in First-Aid treatment, in work places where the number of labour employed is 150 or more.

3.7 In work places where the number of labour employed is 500 or more and hospital facilities are not available within easy distance of the works, First-Aid Posts shall be established and run by a trained Compounder. The Compounder shall be on duty and shall be available at all hours when the workers are at work.

3.8 Where work places are situated in places, which are not towns of cities, a suitable motor transport shall be kept readily available to carry injured person or persons suddenly taken ill to the nearest hospital.

4.0 DRINKING WATER

4.1 In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

4.2 Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

4.3 Every water supply of storage shall be at a distance of not less than 50 feet from any latrines drain or other source of pollution, Where water has to be drawn from
an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap-door which shall be dust and waterproof.

4.4 A reliable pump shall be fitted to each covered well, trap-door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5.0 WASHING FACILITIES

5.1 In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of labour employed herein.

5.2 Separate and adequate screening facilities shall be provided for the use of male and female workers.

5.3 Such facilities shall be conveniently accessible and shall be kept clean and hygienic condition.

6.0 LATRINES AND URINALS

6.1 Latrines shall be provided in every work place on the following scale, namely:

   a) Where females are employed there shall be at least one latrine for every 25 females.

   b) Where males are employed, there shall be at least one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females, as the case may be, up to the first 100, and one for every 50 thereafter.

6.2 Every latrine shall be under cover and so partitioned off as to secure privacy, and shall has a proper door and fastenings.

6.3 Construction of Latrines: The inside walls shall be constructed of masonry or some suitable heat resisting non-absorbent materials and shall be cement washed inside and outside at least once a year. Latrine shall not be a standard lower than borehole system.

6.4 (a) Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers “For Men only” or “For Women only” as the case may be.

   (b) The notice shall also bear the figure of man or of a women, as the case may be.
6.5 There shall be at least one urinal for male workers up to 50 and one for female workers up to 50 employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 and one for every 100 or part thereof, thereafter.

6.6 a) The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

   b) Latrines and urinals other than those connected with a flush sewerage system shall comply with the requirements of the Public Health Authorities.

6.7 Water shall be provided by means of a tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

6.8 DISPOSAL OF EXCRETA

Unless otherwise arranged for by the local sanitary authority arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternatively excreta may be disposed off by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or for refuse and then covering it with a layer of earth for fortnight (when it will turn into manure).

6.9 The Contractor shall, at his own expense, carry out all instruction issued to him by the Engineer-In-Charge to effect proper disposal of night soil and other conservancy work in respect of the Contractor's workmen or employees on the Site. The Contractor shall be responsible for payment of any charges, which may be levied by Municipal or Cantonment Authority for execution of such work on his behalf.

7.0 PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost four suitable sheds, two for males and the other two for rest separately for the use of man and women labour. The height of each shelter shall not be less than 3 meters from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sqm. Per head.

Provided that the Engineer-In-Charges may permit, subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8.0 CRECHES

8.1 A every work place, at which 20 or more women workers are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a playroom for the children and the other as their bedrooms.

The rooms shall be constructed on standard not lower than the following:
i) thatched roof
ii) mud floor and walls.
iii) planks spread over the mud floor and covered with matting

8.2 The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

8.3 The Contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and beddings in the bedroom.

8.4 The Contractor shall provide one Ayaa to look after the children in the creche when the number of women workers does not exceed 50 and two when the number of women workers exceed 50.

8.5 The use of the rooms/earmarked as ealize shall be restricted to children, their attendant and mother of the children.

9.0 CANTEENS

9.1 In every work place where the work regarding the employment of contract labour is likely to continue for six months and wherein contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the Contractor for the use of such labour.

9.2 The canteen shall be maintained by the Contractor in an efficient manner.

9.3 The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.

9.4 The canteen shall be sufficiently lighted at all times when any person has access to it.

9.5 The floor shall be made of smooth and impervious material and inside walls shall be lime washed or colour washed at least once in each year.

Provided that the inside walls of the kitchen shall be lime-washed every four months.

9.6 The premises of the canteen shall be maintained in a clean and sanitary condition.

9.7 Waste Water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

9.8 Suitable arrangements shall be made for the collection and disposal of garbage.

9.9 The dinning hall shall accommodate at a time 30 persons of the labour working at time.
9.10  The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chair shall not be less than one square meter per dinner to be accommodated.

9.11  a)  A portion of the dining hall, and service counter shall be partitioned off and reserved for women workers in proportion to their number.

b)  Washing places for women shall be separate and screened to secure privacy.

9.12  Sufficient tables, stool, chairs or benches shall be available for the number of dinners to be accommodated.

9.13.1  a)  There shall be provided and maintained sufficient utensils, crockery, furniture and any other equipment necessary for the efficient running of the canteen.

b)  The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition.

9.13.2  a)  Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

b)  A service counter, if provided, shall have top of smooth and impervious material.

c)  Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

9.14  The foodstuffs and other items to be served in the canteen shall be in conformity with the normal habits of the labour.

9.15  The charge for foodstuffs, beverages and any other items served in the canteen shall be based on 'No profit No loss' and shall be conspicuously displayed in the canteen.

9.16  In arriving at price of foodstuffs, and other articles served in the canteen, the following items shall not be taken into consideration as expenditure, namely:

a)  The rent of land building.

b)  The depreciation and maintenance charges for the building and equipment provided for the canteen.

c)  The cost of purchase, repair and replacement of equipment including furniture, crockery, cutlery and utensils:

d)  The water charges and other charges incurred for lighting and ventilation:

e)  The interest and amounts spent on the provision and maintenance and equipment provided for in the canteen.
9.17 The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

10.0 ANTI MALARIAL PRECAUTIONS

The Contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer-In-Charge including the filling up of any borrow pits which may have been dug by him.

11.0 AMENDMENTS

EPI may from time to time, add to or amend these rules and issue such directions as it may consider necessary for the purpose of removing any difficulty which may arise in the administration hereof.
CONTRACTOR’S LABOUR REGULATIONS

1.0 SHORT TITLE

These regulations may be called the Contractor “Labour Regulations”.

2.0 DEFINITIONS

2.1 “Workman” means any person employed by EPI or its Contractor directly or indirectly through a sub-Contractor, with or without the knowledge, of EPI to do any skilled, semi-skilled, unskilled, manual, supervisory, technical or clerical work for hire or reward, whether, the terms of employment are expressed or implied but does not include any person-

a) Who is employed mainly in a managerial or administrative capacity; or

b) Who being employed in a supervisory capacity draws wages exceeding Rupees Two thousand Five hundred per person or exercises either by the nature of the duties attached to the office or by reason of powers vested to him, functions mainly of managerial nature.

c) Who is an out worker, that is to say, a person to whom any articles or materials are given out by or on behalf of the principal Employer to be made up cleaned, washed, altered, ornamental finished, repaired, adopted or otherwise processed for sale for the purpose of the trade or business of the principal Employer and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal Employer.

2.2 “Fair Wages” means wages whether for time or piecework fixed and notified under the provisions of the minimum Wages Act from time to time.

2.3 “Contractor” shall include every person who undertake to produce a given result other than a mere supply of goods or articles of manufacture through labour or who supplies labour for any work and includes a sub-Contractor.

2.4 “Wages” shall have the same meaning as defined in the Payment of Wages Act.

2.4.1 Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.

2.4.2 When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week he shall be paid overtime for the extra hours put in by him at double the ordinary rate of wages.
2.4.3.1 Every worker shall be given a weekly holiday on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time, irrespective of whether such worker is governed by the Minimum Wages Act or not.

2.4.3.2 Whether the Minimum Wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same Contractor for a continuous period of not less than 6 days.

2.4.3.3 Here a Contractor is permitted by the Engineer-In-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substitute holiday to him for the whole day on one of the five days immediately before or after the normal weekly holidays and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

3.0 DISPLAY OF NOTICE REGARDING-WAGES, ETC.

The Contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clean and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers, giving the minimum rates of wages fixed under the Minimum Wages Act, the actual wages being paid, the hours of work for which such wages are earned, wage period, dates of payment of wages and other relevant information as per Appendix ‘A’.

4.0 PAYMENT OF WAGES

4.1 The Contractor shall fix wage periods in respect of which wages shall be payable.

4.2 No wage period shall exceed one month.

4.3 The wages of every person employed as labour in an establishment or by a Contractor where less than one thousand, such persons are employed shall be paid before the expiry of the seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.

4.4 Where the employment of any worker is terminated by or on behalf of the Contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

4.5 All payments of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
4.6 Wages due to every worker shall be paid to him direct or to other person authorized by him in this behalf.

4.7 All wages shall be paid in current coin or currency or in both.

4.8 Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.

4.9 A notice showing the wage period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the Contractor to the Engineer-In-Charge under acknowledgment.

4.10 It shall be the duty of the Contractor to ensure the disbursement of wages in the presence of the Engineer or any other authorized representatives of the Engineer-In-Charge who will be required to be present at the place and time of disbursement of wages by the Contractor to workmen.

4.11 The Contractor shall obtain from the Engineer or any other authorized representative of the Engineer-In-Charge as the case may be, a certificate under his signature at the end of the entries in the “Register of Wages” or the “Wage-cum-Muster Roll” as the case may be in the following form:

“Certified that the amount shown in column No............ has been paid to the workmen concerned in my presence on............. at ..........”

5.0 FINES AND DEDUCTIONS, WHICH MAY BE MADE FROM WAGES

5.1 The wages of a worker shall be paid to him without any deduction of any kind except the following:

a) Fines

b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

c) Deduction for damage to or loss of goods expressly entrusted to the employed persons for custody, or from loss of money or any other deduction which he is required to account where such damage or loss is directly attributable to his neglect or default.

d) Deduction for recovery of advances or for adjustment of over payment of wages, advances granted shall be entered in a register.

e) Any other deduction, which the Central Government may from time to time allow.

5.2 No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved by the Chief Labour Commissioner.
NOTE: An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-I.

5.3 No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.

5.4 The total amount of fine which may be imposed in any one-wage period on a worker shall not exceed an amount equal to three paise in a Rupee of the total wages, payable to him in respect of that wage period.

5.5 No fine imposed on any worker shall be recovered from him in installment, or after the expiry of sixty days from the date on which it was imposed.

5.6 Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

6.0 LABOUR RECORDS

6.1 The Contractor shall maintain a “Register of persons employed” on work on contract in form XIII of the CL (R&A) Central Rules 1971 (Appendix-B).

6.2 The Contractor shall maintain a “Muster Roll” register in respect of all workmen employed by him on the work under contract in from XVI of the CL (R&A) Rules 1971 (Appendix-C).

6.3 The Contractor shall maintain a “Wage Register” in respect of all workmen employed by him on the work in form (Appendix-D).

6.4 Register of accidents – The Contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

a) Full particulars of the labourers who met with accident.
b) Rate of wages
c) Sex
d) Age
e) Nature of accident and cause of accident.
f) Time and date of accident.
g) Date and time when he/she admitted in Hospital
h) Date of discharge from the Hospital
i) Period of treatment and result of treatment
j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
k) Claim required to be paid under Workmen’s Compensation Act.
l) Date of payment of compensation.
m) Amount paid with details of the person to whom the same was paid.
n) Authority by whom the compensation was assessed.
o) Remarks.
6.5 **Register of Fines** – The Contractor shall maintain a “Register of Fines” in the form (Appendix-H).

The Contractor shall display in a good condition and in a conspicuous place of work the approved list of Acts and Omission for which fines can be imposed (Appendix-I).

6.6 **Register of Deductions**—The Contractor shall maintain a “Register of Deductions” for damage or loss in form (Appendix-J).

6.7 **Register of Advances**—The Contractor shall maintain a “Register of Advances” in form (Appendix-K).

6.8 **Register of Overtime**—The Contractor shall maintain a “Register of Overtime” in form (Appendix-L).

7.0 **ATTENDANCE CARD-CUM WAGE SLIP:**

7.1 The Contractor shall issue an attendance card-cum-wage slip to each workman employed by him in the specimen form at (Appendix-E).

7.2 The card shall be valid for each wage period.

7.3 The Contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

7.4 The card shall remain in possession of the worker during the wage period under reference.

7.5 The Contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

7.6 The Contractor shall obtain the signature or thump impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

8.0 **EMPLOYMENT CARD**

The Contractor shall issue an Employment Card in form to each worker within three days of the employment of the worker (Appendix-F).

9.0 **SERVICE CERTIFICATE**

On termination of employment for any reason whatsoever the Contractor shall issue to the workman whose services have been terminated, a service certificate in from Appendix-G.
10.0 PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulations Nos. 6 and 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-In-Charge, Labour Officer.

11.0 POWER OF LABOUR OFFICERS TO MAKE INVESTIGATIONS INQUIRY

The Labour Officer or any other person authorized by EPI on its behalf shall have power to make inquiries with a view to ascertaining and enforcing due and proper observance of the Fair Wage Clauses and the Provisions of Regulations. He shall investigate into any complaint regarding the default made by the Contractor or sub-Contractor in regard to such provision.

12.0 INSPECTION OF BOOK AND SLIPS

The Contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour officer or any other person, authorized by the Central Government on his behalf.

13.0 SUBMISSION OF RETURNS

The Contractor shall submit periodical returns as may be specified from time to time.

14.0 AMENDMENTS

EPI may from to time, add or amend the regulations and on any question as to the application, interpretation or effect of these regulations the decision of the Zonal Chief concerned shall be final.
Appendix – ‘A’

LABOUR BOARD

Name of work
Name of Contractor
Address of Contractor
Name and Address of Unit
Name of Labour Enforcement Officer
Address of Labour Enforcement Officer
Date:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category</th>
<th>Minimum wage fixed</th>
<th>Actual wages paid</th>
<th>Number present</th>
<th>Remarks</th>
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Weekly Holiday
Wage Period
Date of Payment of wages
Working hours
Rest interval
# FORM 13

**SEE RULE 75**

## REGISTER OF WORKMEN EMPLOYED BY CONTRACTOR

**Name and Address of Contractor**

**Name and Address of Establishment in/under which contract is carried on**

**Nature and location of work**

**Name & Address of Principal Employer**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name and surname of workman</th>
<th>Age &amp; sex</th>
<th>Father’s Husbands Name</th>
<th>Nature of employment / designation</th>
<th>Permanent home address of the workman (village and Tehsil Taluk and District)</th>
<th>Local address</th>
<th>Date of commencement of employment</th>
<th>Signature or thumb impression of the workman</th>
<th>Date of termination of employment</th>
<th>Reasons for termination</th>
<th>Remarks</th>
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</table>
Appendix – ‘C’

**FORM XVI**

(See Rule 78(2) (193)

**MUSTER ROLL**

Name and address of Contractor

Name and address of establishment in/under which contract is carried on

Nature and location of work

Name and Address of Principal Employer

For the month / fortnight

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the workman</th>
<th>Sex</th>
<th>Father’s / Husband’s Name</th>
<th>Dates</th>
<th>Remarks</th>
</tr>
</thead>
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</table>
Appendix – ‘D’

FORM XVII

[SEE RULE 78(2) (03)]

REGISTER OF WAGES

Name and address of Contractor

Name and address of establishment in/under which contract is carried on

Nature and location of work

Name and Address of Principal Employer

Wage period: per month/ fortnightly

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Workman</th>
<th>Serial No. in the register of workman</th>
<th>Designation nature of work done</th>
<th>Nos. of days worked</th>
<th>Units of work done</th>
<th>Daily rate of wages/ piece rate</th>
<th>Basic Wages</th>
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</table>

Dearness allowance Overtime Other cash payments (Nature of payments to be indicated) Total Duration if any (indicate) Net Amt paid Signature thumb impression of the workman Initial Contractor or his representative

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<th>9</th>
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</table>

Signature of Contractor
FORM XIX

[SEE RULE 78 (2) (B)]

WAGESLIP

Name and address of Contractor

Name and Father’s/Husband’s Name of workman

Nature and location of work

For the Week/Fortnight/Month ending

1. No. of days worked

2. No. of Units worked in case of piece rate workers

3. Rate of daily wages/piece rate

4. Amount of overtime wages

5. Gross wages payable

6. Deductions if any

7. Net amount of wages paid

Sign of the Contractor
### WAGE CARD

**WAGE CARD NO.**

<table>
<thead>
<tr>
<th>NAME AND ADDRESS OF CONTRACTOR</th>
<th>DATE OF ISSUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATURE OF WORK WITH LOCATION</td>
<td>DESIGNATION</td>
</tr>
<tr>
<td>NAME OF WORKMAN</td>
<td>MONTH/FORTNIGHT</td>
</tr>
</tbody>
</table>

**RATE OF WAGES**

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**MORNING**

**EVENING**

**INITIAL**

**RECEIVED FROM**

**THE SUM OF RS.**

**ON ACCOUNT**

**OF MY WAGON.**

**SIGNATURE**

THE WAGE CARD IS VALID FOR ONE MONTH FROM THE DATE OF ISSUE.
FORM XIV

(SEE RULE 76)

EMPLOYMENT CARD

Name and address of Contractor

Name and address of establishment under which

The contract is carried out

Nature and location of work

Name and address of Principal Employer

1. Name of the workman

2. S. Name in the register of workman employed

3. Nature of Employment/Designation

4. Wage rate (with particulars of unit in case of piece work)

5. Wage Period

6. Tenure of employment

7. Remarks

Signature of Contractor


FORM XV

(SEE RULE 77)

SERVICE CERTIFICATE

Name and address of Contractor

Nature and location of work

Name and address of workman

Age or date of birth

Identification Marks

Father’s/Husband’s Name

Name and address of establishment in under which contract is carried on

Name and address of Principal Employer

Total period of which employed

<table>
<thead>
<tr>
<th>S.No.</th>
<th>From</th>
<th>To</th>
<th>Nature of work</th>
<th>Rate of wages (with particular s of unit In case of piece work)</th>
<th>Remarks</th>
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<tbody>
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Signature
FORM XII

[SEE RULE 78 (2) (D)]

REGISTER OF FINES

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of workman

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Designation/nature of employment</th>
<th>Act/Omission for which fine imposed</th>
<th>Date of offence</th>
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Whether workman showed causes against fine

Name of person in whose presence employees explanation was heard

Wage period and wages payable

Amount of fine Imposed

Date on which fine realized

Remarks

<table>
<thead>
<tr>
<th>Whether workman showed causes against fine</th>
<th>Name of person in whose presence employees explanation was heard</th>
<th>Wage period and wages payable</th>
<th>Amount of fine Imposed</th>
<th>Date on which fine realized</th>
<th>Remarks</th>
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</table>
LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED

In accordance with rule of Labour Regulations, to be displayed prominently at the Site of work both in English and local language.

1. Willful insubordination or disobedience, whether alone or in combination with other.
2. Theft, fraud or dishonestly in connection with Contractors beside a business or property of EPI.
3. Taking or giving bribes or any illegal gratifications.
4. Habitual late attendance.
5. Drunk-ness fighting riotous or disorderly or indifferent behaviour.
6. Habitual negligence.
7. Smoking near or around the area where combustible or other materials are locked.
8. Habitual indiscipline.
9. Causing damage to work in the progress or to property of EPI or of the Contractor.
10. Sleeping on duty.
11. Malingering or slowing down work.
12. Giving the false information regarding name, age, fathers name etc.
13. Habitual loss of wage cards supplied by the Employer.
14. Unauthorized use of Employers property or manufacturing or making of unauthorized articles at the work place.
15. Bad workmanship in construction and maintenance by skilled workers, which is not approved by EPI for which the Contractors are compelled to undertake rectifications.
16. Making false complaints and/or misleading statements.
17. Engaging on trade within the premises of the establishment.
18. Any unauthorized divulgence of business affairs of the employees.
19. Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the Employer.
20. Holding meeting inside the premises without previous sanction of the Employers.
21. Threatening or intimidating any workman or employee during the working hours within the premises.
FORM XX

[SEE RULE 78 (2) (D)]

REGISTER OF DEDUCTION FOR DAMAGES OR LOSS

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Designation/nature of employment</th>
<th>Particulars of damage or loss</th>
<th>Date of damage/loss</th>
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<thead>
<tr>
<th>Date of recovery</th>
<th>Whether workman showed cause against deductions</th>
<th>Name of person in whose presence employees explanation was heard</th>
<th>Amount of deduction Imposed</th>
<th>No. of installment</th>
<th>First Installment</th>
<th>Last Installment</th>
<th>Remarks</th>
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Signature of Contractor
FORM XXII

[SEE RULE 78(2)]

REGISTER OF ADVANCES

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Designation/nature of employment</th>
<th>Wages period and wages payable</th>
<th>Date and amount of advance given</th>
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<tr>
<th>Purpose / for which advance made</th>
<th>No. of installments by which advance is to be paid</th>
<th>Date and amount of each installment repaid</th>
<th>Date on which last installment was repaid</th>
<th>Remarks</th>
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# FORM XXIII

[See Rule 78(2) (E)]

## REGISTER OF OVERTIME

Name and address of Contractor

Name and address of establishment in/ under which contract is carried on

Nature and location of work

Name and address of Principal Employer

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of workman</th>
<th>Father’s/Husband Name</th>
<th>Sex</th>
<th>Designation/ nature of employment</th>
<th>Date on which overtime worked</th>
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<tr>
<th>Total overtime worked or production in case of piece rated</th>
<th>Normal rate of wages</th>
<th>Overtime rate of wages</th>
<th>Overtime earning</th>
<th>Rate on which overtime wages paid</th>
<th>Remarks</th>
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APLICATION FOR EXTENSION OF TIME

(To be completed by the Contractor)

PART –I

1. Name of Contractor
2. Name of the work as given in the Agreement
3. Agreement No.
4. Estimated amount put to Tender
5. Date of commencement work as per agreement
6. Period allowed for completion of work as per agreement
7. Date of completion stipulated as per agreement
8. Period for which extension of time has been given previously
   Extension granted
   a) First extension vide Engineer-in-charge letter No… ……date Months Days
   b) 2nd extension vide Engineer-in-charge letter No………. date Months Days
   c) 3rd extension vide Engineer-in-charge letter No………. date Months Days
   d) 4th extension vide engineer-in-charge letter No………. date Months Days

Total extension previously given

9. Reasons for which extension have been previously given (copies of the previous application should be attached)

10. Period for which extension is applied for:

11. Hindrances on account of which extension is applied for with dates on which hindrances occurred, and the period for which these are likely to last.
   a) Serial No.
   b) Nature of hindrance
c) Date of Occurrence

d) Period for which it is likely to last

e) Period for which extension required for this particular hindrance.

f) Overlapping period, if any, with reference to item

g) Net extension applied for

h) Remarks, if any

Total period for which extension is now applied for on account of
hindrances mentioned above ............. Month/ days.

12. Extension of time required for extra work.

13. Details of extra work and on the amount involved:

a) Total value of extra work

b) Proportionate period of extension of time based on estimated amount put
to tender on account of extra work.

14. Total extension of time required for 11 & 12
Submitted to the Engineer-In-Charges office.

SIGNATURE OF CONTRACTOR

DATE
APPLICATION FOR EXTENSION OF TIME

(PART – II)

1. Date of receipt of application from Contractor for the work in the Engineer-In-Charge office.

2. Acknowledgement issued by Engineer-In-Charge vide his letter No dated

3. Engineer-In-Charge remarks regarding hindrances mentioned by the Contractor.

   i) Serial No.
   ii) Nature of hindrance
   iii) Date of occurrence of hindrance
   iv) Period for which hindrance, is likely to last
   v) Extension of time period applied for by the Contractor
   vi) Overlapping period, if any, giving reference to items which overlap
   vii) Net period for which extension is recommended.
   viii) Remarks as to why the hindrance occurred and justification for extension recommended.

4. Engineer-In-Charge recommendations.

(The present progress of the work should be stated and whether the work is likely to be completed by the date upto which extension has been applied for. If extension of time is not recommended, what compensation is proposed to be levied under the agreement.

SIGNATURE OF ENGINEER-IN-CHARGE

APPROVAL OF ZONAL HEAD
PROFORMA FOR EXTENSION OF TIME

PART –III

To

NAME

ADDRESS OF THE CONTRACTOR

SUBJECT:

Dear Sir(s)

Reference your letter No ___________ dated __________, in connection with the grant of extension of time for completion of the work.....

The date of completion for the above mentioned work, is ____________ as stipulated in the agreement, dated ____________.

Extension of time for completion of the above mentioned work is granted upto ____________, without prejudice to the right of EPI to recover compensation for delay in accordance with the provision made in the relevant Clause(s) of the said agreement dated the ___/___/____. It is also clearly understood that EPI shall not consider any revision in contract price or any other compensation whatsoever due to grant of this extension.

Provided that notwithstanding the extension hereby granted, time is and shall still continue to be the essence of the said agreement.

Yours faithfully,

FOR EPI LTD.
PROFORMA FOR BANK GURANTEE IN LIEU OF EARNEST MONEY DEPOSIT

In consideration of Chairman & managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, Lodhi Road, New Delhi Pin-110003. (hereinafter called the EPI) having agreed to accept bank Guarantee of Rs .................. in lieu of EARNEST MONEY DEPOSIT from ................................................................. (hereinafter called the Supplier/ Contractor/ Sub-Contractor, which expression shall include its heirs, successors and assignees) in respect of the Tender for ..................................................................................................................

We, ........................................ bank having its registered/head office at ................................... (hereinafter referred to as the Bank) do hereby agree and undertake to pay to EPI without demur or protest an amount not exceeding Rs....................... on demand by EPI.

We the above said Bank further agree and undertake to pay the said amount of Rs...................... without any demur on demand within 48 hours. Any demand made on the Bank by EPI shall be conclusive as regards the amount due and payable by the Bank under this guarantee.

We the above said Bank further agree that the guarantee herein contained shall be in full force and in effect until ................................................................. date ..............................

Unless a demand or claim under this guarantee is made on us in writing on or before ........................................ date ......................... , we shall be discharged from all liabilities under this guarantee thereafter.

We, the above said Bank, further agree that EPI shall have full liberty, without our consent and without affecting in any manner our obligation to verify, modify or delete any of the conditions.

We, the above said Bank, lastly undertake not to revoke this guarantee during its currency except with the prior consent of EPI in writing.

Dated..........................this day of.............200.

For and on behalf of the Bank

NOTE: on a Non-Judicial stamp paper of Rs. 100/- (Rupees One hundred only)
SECURITY DEPOSIT CUM PERFORMANCE BANK GUARANTEE

The Chairman & Managing Director
(A Govt. of India Enterprise),
Engineering Projects (India) Ltd.
Core-3, SCOPE Complex
7, Institutional Area, Lodhi road
New Delhi – 110 003

Dear Sir,

In consideration of the Chairman & Managing Director, Engineering Projects (India) Ltd. (A Govt. of India Enterprise), Core-3, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi – 110 003 (hereinafter called ‘EPI’ which expression shall unless repugnant to the subject or context includes its successors and assigns) having agreed under the terms and conditions of Supply Contract/Contract/Sub-Contract no._________________________ Dated_______________________ made between M/s_________________________ (hereinafter referred to as the said Supplier/Contractor/Sub-Contractor) which expression shall unless repugnant to the subject or context includes its successors and assigns) and EPI in connection with ____________________________ (hereinafter called ‘The said Supply Contract/Contract/Sub-Contract) to accept a Deed Security Deposit-cum-Performance Bank Guarantee as herein provided for ________________________ in lieu of:

a) The Security Deposit to be made by the said Supplier/Contractor/Sub-Contractor for the due fulfillment by the said Supplier/Contractor/Sub-Contractor of the terms and conditions contained in the said Supply Contract/Contract/Sub-contract, and

b) Fulfillment of the conditions of the said Supply Contract /Contract/Sub-Contract by furnishing a security for the performance of the works and/or equipment/materials supplied in accordance with conditions of the said Supply Contract/ Contract/ Sub-Contract.

1. We _____________________________ (hereinafter referred to as “the said bank which expression shall unless repugnant to the subject or context includes its successors and assigns) and having our registered office at _____________________________ do hereby unconditionally and irrevocably undertake and agree to indemnify and keep indemnified EPI from time to time to the extent of (_______________________________) Only against any loss, damages, costs, charges and expenses caused to or suffered by or that may be caused or suffered by EP [I by reason of any breach or breaches by the said Supplier/Contractor/Sub-Contractor of any of the terms and conditions contained in the said Supply Contract/Contract/Sub-Contract and or any amount becoming due for non-

Signature of Contractor
performance and/or penalty as assessed by EPI and top unconditionally pay the amount claimed by EPI on demand and without demur and protest.

2. We the said Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Supply Contract/Contract/Sub-Contract and till all the dues of EPI under the said Supply Contract/Contract/Sub-Contract or by virtue of any of the terms and conditions governing the said Supply Contract/Contract/Sub-Contract have been fully paid and its claims satisfied or discharged and till EPI certifies that the terms and conditions of the said Supply Contract/Contract/Sub-Contract have been fully and properly carried out by the said Supplier/Contractor/Sub-Contractor and accordingly discharge this guarantee subject, however, that EPI shall have no claim under this guarantee after 6 months from the date of expiry of the guarantee unless a notice of the claim under this guarantee has been served on the Bank before the expiry of the said period of 6 months.

3. EPI shall have the fullest liberty without affecting in any way the liability of the said Bank under this Guarantee or indemnity from time to time to vary any of the terms and conditions of the said Supply Contract/Contract/Sub-Contract to extend time of performance of the said Supply Contract/Contract/Sub-Contract or to postpone for any time and from time to time any power’s exercisable by it against the said Supplier/Contractor/Sub-Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Supply Contract/Contract/Sub-Contract or securities available to EPI and the said Bank shall not be released from its liability under these presents by any exercise by EPI of the liberty with reference to the matters aforesaid or by reason of time being given to the said Supplier/Contractor/Sub-Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the said Bank from its such liability.

4. We, the said Bank, further agree that EPI shall be the sole judge of and as to whether the said Supplier/Contractor/Sub-Contractor has committed any breach or breaches of any of the terms and conditions of the said Supply Contract/Contract/Sub-Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by EPI on account thereof and the decision of EPI that the said Supplier/Contractor/Sub-Contractor has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges and expenses caused to or suffered by EPI from time to time shall be final and binding on the Bank.

5. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of EPI and liabilities of the said Supplier/Contractor/Sub-Contractor arising up to and until mid night of ________________________, subject the claim period as mentioned in para ______________.

6. This guarantee shall be in addition to any other guarantee or security whatsoever that EPI may now or at any time anywise may have in relation to the said Supplier/Contractor/Sub-Contractor obligation/liabilities under and/or in connection with the said Supply Contract/Contract/Sub-Contract and EPI shall have full authority to take recourse to or enforce this guarantee in preference to any other guarantee or
security which EPI may have or obtain and there shall be no forbearance on the part
of EPI IN ENFORCING OR REQUIRING ENFORCEMENT OF ANY OTHER
SECURITY AND shall not have the effect of releasing the said Bank from its full
liability hereunder:

7. EPI shall be at liberty without reference to the said Bank and without effecting the full
liability of the said Bank hereunder to take any other security in respect of the said
supplier's/Contractor's/sub-Contractor's obligations and/or liabilities under or in
connection with the said Supply Contract/ Contract/ Sub-Contract.

8. This guarantee shall not be determined or affected by the liquidation or winding up,
dissolution, or change of constitution or insolvency of the said
Supplier/Contractor/Sub-Contractor, but shall in all respects and for all purposes be
binding and operative until payment of all moneys paid to EPI in terms thereof.

9. The said Bank hereby waives all rights at any time inconsistent with the terms of this
guarantee and the obligations of the said Bank in terms hereof shall not be anywise
affected or suspended by reasons of any dispute or disputes having been raised by
the said Supplier/Contractor/Sub-Contractor (whether or not pending before any
arbitrator, tribunal or court) of any denial or liability by the said Supplier/ Contractor/
Sub-Contractor stopping or preventing or purporting to stop or prevent any payment
by the said Bank to EPI in terms hereof. The amount stated in any notice of demand
addressed by EPI to the Guarantor Bank as liable to be paid to EPI by the Supplier/
Contractor/ Sub-Contractor on account of any losses or damages or costs, charges
and/or expenses shall as between the said bank and EPI be conclusive evidence of
the amount so liable to be paid to EPI or suffered or incurred by EPI as the case may
be and payable by the said Bank to EPI in terms hereof. We, the said Bank further
undertake that we shall pay forthwith the amount stated in the notice of demand to
EPI without demur and protest.

10. We, the said bank undertake not to revoke this guarantee during its currency except
with the consent of EPI in writing and agree that any change in the constitution of the
aid Supplier/Contractor/Sub-Contractor or the said Bank shall not discharge our
liabilities hereunder.

11. It shall not be necessary for EPI to proceed against the said
Supplier/Contractor/Sub-Contractor before proceeding against the Bank and the
guarantee herein contained shall be enforceable against the Bank notwithstanding
any security which EPI may have obtained or obtain from the
Supplier/Contractor/Sub-Contractor shall at the time when proceedings are taken
against the said Bank hereunder be outstanding or unrealized.

12. Our liability under this guarantee shall be restricted to ____________________ and
this guarantee shall remain in force until midnight of ____________________ unless a
claim to enforce this guarantee is filed with us within six months from
_________________________. (which is date of expiry of this guarantee), we shall be
discharged from all liabilities under this guarantee thereafter.

DATED ---------------------------- THIS day of -----------------------200…

FOR AND ON BEHALF OF BANK
PROFORMA FOR ADVANCE BANK GUARANTEE

To

The Chairman & Managing Director,
Engineering Projects (India) Ltd.,
(A Govt. of India Enterprise),
Core-3, Scope Complex,
7, Institutional Area,
Lodhi Road,
New Delhi—110 003.

Dear Sir,

1. In consideration of the Chairman & Managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi – 110 003 (hereinafter called 'EPI' which expression shall includes its successors and assigns) having agreed under the terms and conditions of Supply Contract/ Contract/ Sub-Contract No……………………………dated...(hereinafter referred to as the said Supply Contract/ Contract/ Sub-Contract) made between EPI and……………………….hereinafter called the Supplier/ Contractor/ Sub-Contractor) which expression shall include its successors and assigns to make at the request of the Supplier/ Contractor/ Sub-Contractor a lump sum advance of Rs…………..for utilising it only for the purposes of the said Supply Contract/ Contract/ Sub-Contract on his furnishing a guarantee acceptable to EPI.

2. We, the... ............................Bank (hereinafter referred to as 'the said Bank) a Company under the Companies Act 1956 and having our registered office at…………. .........................do hereby guarantee the recovery of the said advance and interest thereon as provided according to the terms and conditions of the said Supply Contract/ Contract/ Sub-Contract. If the Supplier/ Contractor/ Sub-Contractor fails to utilise the said advance for the purposes of the said Supply Contract/ Contract/ Sub-Contract and/or the said advance together with interest thereon as aforesaid is not fully recovered by EPI, we. .............Bank hereby unconditionally and irrevocably undertake to pay the EPI on demand and without demur or protest to the extent of the said sum of Rs………………..any claim made by EPI on us against non-utilisation / misutilisation of the said advance and/or by reason of EPI not being able to recover in full the sum of Rs……………….. with interest as aforesaid.

3. We.................................Bank further agree that EPI shall be the sole judge of and as to whether the said Supplier/ Contractor/ Sub-Contractor has utilised or not utilised the said advance or any part thereof for the purposes of the said Supply Contract/ Contract/ Sub-Contract and/or as to whether the advance or any part thereof with
interest has been recovered or not and the finding of the EPI in this regard shall be final and binding on us.

4. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Supply Contract/ Contract/ Sub-Contract and till the said advance with interest has been fully recovered and its claims satisfied or discharged and till EPI certifies that the said advance with interest has been fully recovered from the Supplier/ Contractor/ Sub-Contractor.

5. EPI shall have the fullest liberty without affecting in any way the liability to the said Bank under this guarantee or indemnity from time to time to vary any of the terms and conditions of the said Supply Contract/ Contract/ Sub-Contract, or the advance or to extend time of performance by the said Supplier/ Contractor/ Sub-Contractor or to postpone for any time and from time to time any powers exercisable by it against the said Supplier/ Contractor/ Sub-Contractor and either to enforce or forbear from enforcing any of the terms and conditions governing the said Supply Contract/ Contract/ Sub-Contract or securities available to EPI and the said Bank shall not be released from its liability under these presents by any exercise by EPI of the liberty with reference to the matters aforesaid or by reason of time being given to the said Supplier/ Contractor/ Sub-Contractor or any other forbearance, act or omission on the part of the EPI or any indulgence by EPI to the said Supplier/ Contractor/ Sub-Contractor or of any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the said Bank from its such liability.

6. The Bank hereby waives all rights at any time inconsistent with the terms of this guarantee/Undertaking and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reasons of any dispute or disputes having been raised by the Supplier/ Contractor/ Sub-Contractor (whether or not pending before any arbitrator, Tribunal or court) or any denial or liability by the Supplier/ Contractor/ Sub-Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to EPI in terms hereof.

7. The amount stated in any notice of demand addressed by EPI to Bank as liable to be paid to EPI by the Supplier/ Contractor/ Sub-Contractor, shall be conclusive evidence of the amount so liable to be paid to EPI by the Bank.

8. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever that EPI may now or any time anywise may have in relation to the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations of liabilities under and/or in connection with the said Supply Contract/ Contract/ Sub-Contract, and EPI shall have full authority to take recourse to or enforce this security in preference to any other guarantee or security which EPI may have or obtain and there shall be no forbearance on the part of EPI in enforcing or requiring enforcement of any other security and shall not have the effect of releasing the Bank from its full liability hereunder.

9. It shall not be necessary for EPI to proceed against the said Supplier/ Contractor/ Sub-Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which EPI may have obtained or obtain from the Supplier/ Contractor/ Sub-Contractor, shall at the time
when proceedings are taken against the said Bank hereunder be outstanding or

10. We, ..................................... the said Bank further undertake that we shall pay forthwith
the amount stated in the notice of demand without demur and protest notwithstanding
any dispute/difference pending between the parties before the arbitrator Tribunal or
Court and/or dispute is being referred to arbitrator.

11. We, the said Bank undertake not to revoke this Guarantee during its currency except
with the consent of EPI in writing and agree that any change in the Constitution of the
said Supplier/ Contractor/ Sub-Contractor or the said Bank shall not discharge our
liability hereunder.

12. This guarantee/undertaking shall be a continuing guarantee/undertaking and shall
remain valid and irrevocable for all claims of EPI and liabilities of the Supplier/
Contractor/ Sub-Contractor arising up to and until midnight of………

13. Notwithstanding anything contained herein above, our liability under this guarantee
shall be restricted to Rs………………. (Rs……………………………….) and this
guarantee shall remain in full force till……………. unless a claim is made on us
within 3 months from the date of expiry of this guarantee i.e. before all the claims
under this guarantee shall be forfeited and we shall be relieved of and discharged
from our liabilities hereunder.

Dated.........................................................day of......................................... 200

For and on behalf of Bank
PROFORMA FOR PERFORMANCE BANK GUARANTEE

To

The Chairman & Managing Director,
Engineering Projects (India) Ltd.,
(A Govt. of India Enterprise),
Core-3, Scope Complex,
7, Institutional Area,
Lodhi Road,
New Delhi—110 003.

Dear Sir,

In consideration of the Chairman & Managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi – 110 003 (hereinafter called ‘EPI’ which expression shall include its successors and assigns) having awarded to ……………… (hereinafter referred to as ‘the Supplier/ Contractor/ Sub-Contractor’ which expression shall wherever the subject or context so permits include its successors and assigns) a Supply Contract/Contract / Sub-Contract No. ……………… in terms inter alia, of EPI Letter No. ………………dated… and the General Conditions of Contract/ General Purchase Conditions of EPI and upon the condition of the Supplier’s/ Contractor’s/ Sub-Contractor’s furnishing security for the performance of the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations and/or discharge of the Supplier’s/ Contractor’s/ Sub-Contractor’s liability under and/or in connection with the said Supply Contract/ Contract/ Sub-Contract up to a sum of Rs…………(Rupees………………………. only) amount to………..percent of the total Supply Contract/ Contract/ Sub-Contract Value.

1. We………………………………………………………………………………………….(hereinafter called ‘the Bank’ which expression shall include its successors and assigns) hereby jointly and severally undertake the guarantee to payment to EPI in rupees forthwith on demand in writing and without protest or demur or any and all monies anywise payable by the Supplier/ Contractor/ Sub-Contractor to EPI under in respect of or in connection with the said Supply Contract/ Contract/ Sub-Contract inclusive of all EPI’s losses and damages and costs, charges and expenses and other moneys anywise payable in respect to the above as specified in any notice of demand made by the EPI to the Bank with reference to this guarantee up to and aggregate limit of Rs…………………………(Rupees…………………………………………………..only).
2. We……………….. Bank further agree that EPI shall be sole judge of and as to whether the said Supplier/ Contractor/ Sub-Contractor has committed any breach or breaches of any of the terms and conditions of the said Supply Contract/ Contract/ Sub-Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by EPI on account thereof and the decision of EPI that the said Supplier/ Contractor/ Sub-Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by EPI from time to time shall be final and binding on us.

3. EPI shall be at liberty without reference to the Bank and without effecting the full liability of the Bank hereunder to take any other security in respect of the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations and/or liabilities under or in connection with the said Supply Contract/ Contract/ Sub-Contract and to vary the forms vis-à-vis the Supplier/ Contractor/ Sub-Contractor of the said Supply Contract/ Contract/ Sub-Contract or to grant time and/or indulgence to the Supplier/ Contractor/ Sub-Contractor or to reduce or to increase or otherwise vary the prices of the total Supply Contract/ Contract/ Sub-Contract Value or to release or to forbear from enforcement of all or any of the security and/or any other security(ies) now or hereafter held by the EPI and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Supplier/ Contractor/ Sub-Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to EPI hereunder or prejudice rights of EPI against the bank.

4. The guarantee/undertaking shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Supplier/ Contractor/ Sub-Contractor but shall in all respects and for all purposes be binding and operative until payment of all moneys made to EPI in terms thereof.

5. The Bank hereby waives all rights at any time inconsistent with the terms of this guarantee/undertaking and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reasons of any dispute or disputes having been raised by the Supplier/ Contractor/ Sub-Contractor (whether or not pending before any arbitrator, Tribunal or Court) of any denial or liability by the Supplier/ Contractor/ Sub-Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to the EPI in terms hereof.

6. The amount stated in any notice of demand addressed by EPI to Bank as liable to be paid to EPI by the Supplier/ Contractor/ Sub-Contractor or as suffered or incurred by the EPI on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to EPI or suffered or incurred by EPI as the case may be and shall be payable by the Bank to EPI in terms hereof.
7. This guarantee/undertaking shall be a continuing guarantee/undertaking and shall remain valid and irrevocable for all claims of EPI and liabilities of the Supplier/ Contractor/ Sub-Contractor arising up to and until midnight of…………….

8. This guarantee/undertaking shall be in addition to any other guarantee or security whatsoever that EPI may now or any time anywise may have in relation to the Supplier’s/ Contractor’s/ Sub-Contractor’s obligations of liabilities under and/or in connection with the said Supply Contract/ Contract/ Sub-Contract, and EPI shall have full authority to take recourse to or enforce this security in preference to any other guarantee of security which EPI may have or obtain and here shall be no forbearance on the part of EPI in enforcing or requiring enforcement of any other security and shall not have the effect of releasing the Bank from its full liability hereunder.

9. It shall not be necessary for EPI to proceed against the said Supplier/ Contractor/ Sub-Contractor before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the EPI may have obtained or obtain from the Supplier/ Contractor/ Sub-Contractor, shall at the time when proceedings are taken against the said Bank hereunder be outstanding or unrealised.

10. We the said Bank undertake not to revoke this guarantee during its currency except with the consent of EPI in writing and agree that any change in the constitution of the said Supplier/ Contractor/ Sub-Contractor or the said bank shall not discharge our liability hereunder.

11. We …………the said Bank further undertake that we shall pay forthwith the amount stated in the notice of demand without demur and protest notwithstanding any dispute/difference pending between the parties before the arbitrator Tribunal or Court and/or any dispute is being referred to arbitrator.

12. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs………………………………. and this guarantee shall remain in force till……………… unless a claim is made on us within 3 months from that date, that is before all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities thereunder.

Dated ………………………………………. day of…………………………………………200

For and on behalf of Bank
PROFORMA FOR INDEMNITY BOND TO BE EXECUTED BY
THE CONTRACTOR FOR SECURED ADVANCE
AGAINST MATERIALS SUPPLIED FOR THE PROJECT

(On non-judicial stamp paper of appropriate value)

INDEMNITY BOND

THIS INDEMNITY BOND is made this ................................................ day of.............. 20........... by.................................. (Contractor’s Name) a Company registered under the Companies Act, 1956/Partnership firm/Proprietary concern having its Registered Office at ............... (hereinafter called as ‘Contractor’ which expression shall include its successors and permitted assigns) in favour of Engineering Projects (India) Limited, a Company incorporated under the Companies Act, 1956 having its Registered Office at Core-3, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi - 110 003 (hereinafter called “EPI” which expression shall include its successors and assigns) :

WHEREAS EPI has awarded to the Contractor a Contract for the work of............... vide its letter of Intent/Work Order No............. dated............... (hereinafter called the “Contract”) in terms of which EPI is required to give “Secured Advance” to the Contractor as per Clause no. 35 of the General Conditions of Contract against supply of materials by the Contractor for the project on the security of materials, the quantities, rates and other particulars of which are detailed in the Bill of Quantities for the said Contract.

And WHEREAS by virtue of Clause no. 35 of the General Conditions of Contract of the said Contract, the Contractor is required to execute an Indemnity Bond in favour of EPI for the amount of “Secured Advance” towards the materials actually supplied by the Contractor for the Contract Work from time to time to EPI for the purpose of performance of the Contract. (hereinafter called the “Materials”).

“AND WHEREAS the Contractor has applied to EPI that they may be allowed “Secured Advance” on the security of materials absolutely belonging to them and brought by them to the site of the works for use in construction of the work”.

NOW THEREFORE, This Indemnity Bond witnesseth as follows:

1. That in consideration of the “Secured Advance” being given to the Contractor as mentioned in the Contract, for the purpose of performance of the Contract, the Contractor hereby undertakes to indemnify and shall keep EPI indemnified, for the Actual Cumulative Amount of the “Secured Advance” given to the Contractor from time to time against the said Contract. The Contractor hereby acknowledges actual receipt of the materials etc. as per despatch title documents being /to be handed over to EPI from time to time. The Contractor shall hold such materials in trust as a “Trustee” for and on behalf of EPI.
2. That the Contractor is obliged and shall remain absolutely responsible for the safe transit/protection and custody of the materials at EPI’s project site against all risks whatsoever till the materials are duly used/erected in accordance with the terms of the Contract and the plant/package duly erected and commissioned in accordance with the terms of the Contract is taken over by EPI and the Secured Advance is fully adjusted/recovered as per terms of the Contract. The Contractor undertakes to keep EPI harmless against all losses, damages, deterioration and shortages that may be caused to the materials.

3. The Contractor undertakes that the materials shall be used exclusively for the performance/execution of the Contract strictly in accordance with its terms and conditions and no part of the materials shall be utilized for any other work or purpose whatsoever. It is clearly understood by the Contractor that non-observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia constitute a criminal breach of trust on the part of the Contractor for all intents and purposes including legal/penal consequences.

4. That EPI is and shall remain the exclusive owner of the materials free from all encumbrances, charges or liens of any kind, whatsoever. The materials shall at all times be open to inspection and checking by the Engineer – In-Charge or other employees/agents authorized by him in this regard. Further, EPI shall always be free at all times to take possession of the materials in whatever form the materials may be, if in its opinion, the materials are likely to be endangered, misutilised or converted to uses other than those specified in the Contract, by any acts of omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of EPI to handover the materials without any demur or reservation.

5. That this Indemnity Bond is irrevocable. If at any time any loss or damage occurs to the materials or the same or any part thereof is mis-utilised in any manner whatsoever, then the Contractor hereby agrees that the decision of the Engineer-In-Charge of EPI as to assessment of loss or damage to the materials shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged materials at its own cost and/or shall pay the amount of ‘Secured Advance’ to EPI without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to EPI against the Contractor to recover any amount or all the amounts of this Bond from any dues of the Contractor under the Contract or as per the law.

6. This Bond shall remain in force and effect till the completion of the work as per the aforesaid Contract and till all the amount recoverable under this Bond from the Contractor is fully recovered by EPI. The Bond can not be revoked by the Contractor without the written consent of EPI.

7. That Contractor also agrees that any change in the constitution of the Contractor shall not discharge them from their obligation and liability.

8. This Bond shall be treated as an additional addage to the Contract and nothing herein contained shall be construed to adversely affect the rights of EPI in the Contract.
IN WITNESS WHEREOF, the Contractor has signed this Indemnity Bond through its duly authorized representative on the date and place first above written.

For and on behalf of Contractor

(Contractor’s Name)

WITNESS:

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2. 1. Signature                      

2. Name                           

2. Address                        

3. Address                        Seal
FORM FOR GUARANTEE BOND

FOR ANTI-TERMITE TREATMENT

THIS AGREEMENT made this ____ day of Two thousand ____ between M/s________ (hereinafter called the guarantor of the one part and M/s Engineering Projects (India) Limited, hereinafter called EPI hereinafter called the OWNER of the other part.

Whereas this agreement is supplementary to the contract hereinafter called the contract dated______ made between the guarantor of the one part and Engineering Projects (India) Ltd., of the other part whereby the Contractor inter-alia, understood to render the buildings and structures in the said contract recited, completed, termite proof. And whereas the guarantor agreed to give a guarantee to the effect that the said structure will remain termite proof for TEN YEARS to be so reckoned from the date after the maintenance period prescribed in the contract expires.

During this period of guarantee the guarantor shall make good all defects and for that matter shall replace at his risk and cost such wooden member as may be damaged by termite and in case of any other defect being found, he shall render the building termite proof at his cost to the satisfaction of the Engineer-In-Charge and shall commence the works of such rectification within seven days from date of issuing notice from the Engineer-In-Charge calling upon him to rectify the defects falling which the work shall be got done by EPI/ OWNER by some other Contractor at the guarantor’s cost and risk and in the later case the decision of the Engineer-In-Charge as to the cost recoverable from the guarantor shall be final and binding.

That if the Guarantor fails to execute the Anti-Termite treatment or commits breaches hereunder then the Guarantor will indemnify EPI against all losses damages, cost expenses or otherwise which may be incurred by him by reasons of any default on the part of the guarantor in performance and observance of this supplemental Agreement. As to the amount of loss and or damage and/or cost incurred by EPI/ OWNER, the decision of the Engineer-In-Charge will be final and binding on the parties.

In witness where of these presents have been executed by the Guarantor________ and by____________ for and on behalf of EPI on the day of month and year first above written.

Signed sealed and delivered by (Guarantor)

IN THE PRESENCE OF:

1.

2.

Signed for and on behalf of EPI by/ in presence of:

1.

2.
GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The agreement made this ................. day of ................. Two thousand ................. between ........................................ (hereinafter called Guarantor of the one part) and EPI (hereinafter called the Execution Agency of the other part).

WHEREAS this agreement is supplementary to a contract (hereinafter called the Contract), dated ............ and made between the GUARANTOR OF THE ONE part and EPI of the other part, whereby the Contractor, inter-alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.

AND WHEREAS the Guarantor agreed to give a guarantee to the effect that the said structures will remain water and leak proof for ten years from the date of handing over of the structure of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract.

Provided that the Guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose.

a) Misuse of roof shall mean any operation, which will damage proofing treatment, like chopping of firewood and things of the same nature, which might cause damage to the roof.

b) Alternation shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts

c) The decision of the Engineer-In-Charge with regard to cause of leakage shall be final

During this period of guarantee, the Guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-In-Charge at his cost and shall commence the work for such rectification within seven days from the date of issue of notice from the Engineer-In-Charge calling upon him to rectify the defects failing which the work shall be got done by EPI by some other Contractor at the guarantor's cost and risk. The decision of Engineer-In-Charge as to the cost, payable by the Guarantor shall be final and binding.

That if the Guarantor fails to execute the waterproofing or commits breach thereunder, then the Guarantor will indemnify the principal and his successors against all laws
damage, cost, expense or otherwise which may be incurred by him by reason of any
default on the part of the GUARANTOR in performance and observance of this
supplementary agreement. As to the amount of loss and / or damage and/ or cost
incurred by EPI, the decision of the Engineer-In-Charge will final and binding on the
parties.

IN WITNESS WHEREOF these presents have been executed by the Obligor,........
and by ............. And for and on behalf of EPI on the day, month and year first above
written.

Signed, sealed and delivered by Obligor in the presence of-

1. 

2. 

Signed for and on behalf of EPI by ______________

In presence of :

1. 

2. 
AGREEMENT FORM

This agreement made this day of (Month) (Year), between THE ENGINEERING PROJECTS (INDIA) LIMITED (EPI), (A Govt. of India enterprise) a company incorporated under the Companies Act, 1956 having its Registered and Corporate Office at Core-3, Scope Complex, 7, Institutional area, Lodhi Road, New Delhi – 110003 (hereinafter referred to as the “EPI” which expression shall include its administrators, successors, executors and assigns) of the one part and M/s (NAME OF CONTRACTOR) (hereinafter referred to as the ‘Contractor’ which expression shall unless the context requires otherwise include its administrators, executors and permitted assigns) of the other part.

WHEREAS, EPI, is desirous of construction of (NAME OF WORK) (hereinafter referred to as the “PROJECT”) on behalf of the (NAME OF OWNER/MINISTRY) (hereinafter referred to as “OWNER”), and had invited Tenders as per Tender Documents vide NIT No. _____.

AND WHEREAS (NAME OF CONTRACTOR) had participated in the above referred Tender vide their tender dated _____ and EPI has accepted their aforesaid Tender and award the contract for (NAME OF PROJECT) on the terms and conditions contained in its Letter of Intent No. _______ dated ______ and the documents referred to therein, which have been unequivocally and unconditionally accepted by (NAME OF CONTRACTOR) vide their Letter of Undertaking dated _______ resulting into a contract.

NOW THEREFORE THIS DEED WITNESSETH AS UNDER:

ARTICLE 1.0 – AWARD OF CONTRACT

1.1 SCOPE OF WORK

EPI has awarded the contract to (NAME OF CONTRACTOR) for the work of (NAME OF WORK) on the terms and conditions in its Letter of Intent No. _______ dated _______ and the documents referred to therein. The award of work has taken effect from (DATE) i.e. the date of issue of aforesaid letter of intent. The terms and expressions used in this agreement shall have the same meanings as are assigned to them in the “Contract Documents” referred to in the succeeding Article.

ARTICLE 2.0 – CONTRACT DOCUMENTS

2.1 The contract shall be performed strictly as per the terms and conditions stipulated herein and in the following documents attached herewith (hereinafter referred to as “Contract Documents”).

a) EPI Notice Inviting Tender vide No. _______ date _______ and EPI’s Tender Documents consisting of:

i) Instructions to Tenderers and General Conditions of Contract (GCC) alongwith amendments/errata to GCC (if any) issued (Volume-I).
ii) Additional Conditions of Contract including Appendices & Annexures, Volume-II.

iii) Bill of Quantities alongwith amendments/corrigendum of schedule items, if any (Volume-III).

iv) Technical Specifications

v) Drawings

vi) ______________________________________________

b) (NAME OF CONTRACTOR) letter/proposal no._________________
dated ________ and their subsequent communication:

i) Letter of Undertaking of Tender Conditions dated ______________

ii) _____________________________________________________

iii) _____________________________________________________

2.2 EPI’s detailed Letter of Intent No. __________ dated _____ including Bill of Quantities. Agreed time schedule, Contractor’s Organisation Chart and list of Plant and Equipments submitted by Contractor.

2.3 All the aforesaid contract documents referred to in Para 2.1 and 2.2 above shall form an integral part of this Agreement, in so far as the same or any part thereof conform, to the Tender Documents and what has been specifically agreed to by EPI in its Letter of Intent. Any matter inconsistent therewith, contrary or repugnant thereto or deviations taken by the Contractor in its “TENDER” but not agreed to specifically by EPI in its Letter of Intent, shall be deemed to have been withdrawn by the Contractor without any cost implication to EPI. For the sake of brevity, this Agreement alongwith its aforesaid contract documents and Letter of Intent shall be referred to as the “Contract”.

ARTICLE 3.0 – CONDITIONS & CONVENANTS

3.1 The scope of Contract, Consideration, Terms of Payments, Advance, Retention Moneys, Taxes wherever applicable, Insurance, Agreed Time Schedule, Compensation for delay and all other terms and conditions contained in EPI’s Letter of Intent No. __________ dated _____ are to be read in conjunction with other aforesaid Contract Documents. The contract shall be duly performed by the Contractor strictly and faithfully in accordance with the terms of this contract.

3.2 The scope of work shall also include all such items which are not specifically mentioned in the Contract Documents but which are reasonably implied for the satisfactory completion of the entire scope of work envisaged under this contract unless otherwise specifically excluded from the scope of work in the Letter of Intent.

3.3 Contractor shall adhere to all requirements stipulated in the Contract documents.

3.4 Time is the essence of the Contract and it shall be strictly adhered to. The progress of work shall conform to agreed works schedule/contract documents and Letter of Intent.

3.5 This agreement constitutes full and complete understanding between the parties and terms of the presents. It shall supersede all prior correspondence to the extent of inconsistency or repugnancy to the terms and conditions contained in
Agreement. Any modification of the Agreement shall be effected only by a written instrument signed by the authorized representative of both the parties.

3.6 The total contract price for the entire scope of this contract as detailed in Letter of Intent is Rs. _________________ (Rupees _____________________________ only), which shall be governed by the stipulations of the contract documents.

ARTICLE 4.0 – NO WAIVER OF RIGHTS

4.1 Neither the inspection by EPI or the Engineer-In-Charge or Owner or any of their officials, employees or agents nor order by EPI or the Engineer-In-Charge for payment of money or any payment for or acceptance of, the whole or any part of the work by EPI or the Engineer-In-Charge nor any extension of time nor any possession taken by the Engineer-In-Charge shall operate as waiver of any provisions of the contract, or of any power herein reserved to EPI, or any right to damage herein provided, nor shall any waiver of any breach in the contract be held to be a waiver of any other or subsequent breach.

ARTICLE 5.0 – GOVERNING LAWS AND JURISDICTION

5.1 The Laws applicable to this contract shall be the laws in force in India and as amended from time to time.

Jurisdiction shall be of the Court (s) stated in the 'Memorandum' to the 'Form of Tender' only.

5.2 Notice of Default

Notice of default given by either party to the other party under the Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto, if delivered against acknowledgment due or by FAX or by registered mail duly addressed to the signatories at the address mentioned herein above.

IN WITNESS WHEREOF, the parties through their duly authorized representatives have executed these presents (execution whereof has been approved by the Competent Authorities of both the parties) on the day, month and year first above mentioned at New Delhi.

For and on behalf of: For and on behalf of:

(NAME OF CONTRACTOR) M/s. Engineering Projects (I) Ltd.

WITNESS: WITNESS:

1.

2.
ENGINEERING PROJECTS (INDIA) LIMITED
(A Govt. of India Enterprise)

QUALITY CONTROL FORMATS AND CHECKLISTS
**NAME OF PROJECT**

**CONTRACT**

**CONTRACT No.**

**CHECK LIST FOR CONCRETING**

**REF DRAWING No.**

**LOCATION BLOCK**

**FLOOR**

**AREA**

<table>
<thead>
<tr>
<th>LAYOUT</th>
<th>Alignment</th>
<th>Checked</th>
<th>Level of base</th>
<th>Dimensional Check (edges &amp; diagonals)</th>
<th>Stairers</th>
<th>Location of cutouts &amp; services</th>
</tr>
</thead>
</table>

| STAGING / SCAFFOLDING | Adequacy & rigidity of Props, stays, bracings, conformity to scheme orgs. |               |                       |                                       |          |                               |

| FORMWORK       | Qty. of forms and support Props adequate | Vertical form surface in alignment & plumb | Even Surface Oil sprayed | Gaps between shuttering are properly closed | No space for sagging of Form work |

| REINFORCEMENT  | Cutting & bending as per Bar bending schedule (Schedules attached) | Adequate taps | Chair / cover blocks Placed as per scheme | Binding wire not touching shuttering | Fixtures, inserts | Conduits in position |

| Dowels & positioning Provided as per org. | Walkway for Labour provided | | |

| PRE-CONCRETING | Concreting Arrangements | Approval of Construction joint | Mixer / vibrator | Condition & mixing | Top level of Concrete marked | Transporting & Placing arrangement |

| POST-CONCRETING | Compaction Checked | Removal of Laitance | Post Concreting Level/Dimensions | No. of Cubes Cast | |

| DESHUTTERING & CLEARING | Curing days | Water / compound | Surface finish | Concrete Test Results OK | |

| W.O. ITEM | UNIT | QTY. |

| SIGNATURE | DATE | SITE ENGR | DATE | SITE INCHARGE | DATE | CONSULTANT | DATE |

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<table>
<thead>
<tr>
<th>LAYOUT</th>
<th>CHECK LIST FOR MASONRY WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACT</td>
<td>Brick on edge (top course)</td>
</tr>
<tr>
<td>SCAFFOLDING</td>
<td>Adequacy of props, Stays, platform</td>
</tr>
<tr>
<td>PRE-LAYING</td>
<td>Rigidity of base</td>
</tr>
<tr>
<td>LAYING</td>
<td>Bricks as per specification</td>
</tr>
<tr>
<td>CURING AND CLEARING</td>
<td>Joint thickness &amp; course</td>
</tr>
<tr>
<td></td>
<td>Joint alignment Checked</td>
</tr>
<tr>
<td></td>
<td>Mortar grade &amp; mix As specified</td>
</tr>
<tr>
<td></td>
<td>Approach to height</td>
</tr>
<tr>
<td></td>
<td>Bricks moistened</td>
</tr>
<tr>
<td></td>
<td>Vertical joints</td>
</tr>
<tr>
<td></td>
<td>Properly mortar filled from top</td>
</tr>
<tr>
<td></td>
<td>Bearing plaster for Concrete</td>
</tr>
<tr>
<td></td>
<td>Scaffolding removed (if required)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONTRACT No.</th>
<th>LOCATION BLOCK</th>
<th>FLOOR</th>
<th>AREA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>W.O. ITEM</th>
<th>UNIT</th>
<th>QTY</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>DATE</th>
<th>SITE ENGR</th>
<th>DATE</th>
<th>SITE INCHARGE</th>
<th>DATE</th>
<th>CONSULTANT</th>
<th>DATE</th>
</tr>
</thead>
</table>

NAME OF PROJECT ______________________

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<table>
<thead>
<tr>
<th>CONTRACT</th>
<th>CHECK LIST FOR PLASTERING WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACT NO.</td>
<td>REF DRAWING No.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SCAFFOLDING</th>
<th>Platform</th>
<th>Stability</th>
<th>Movement space</th>
<th>Approach to Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE</td>
<td>All chasing work Complete</td>
<td>Fixing in position</td>
<td>Using clamps etc.</td>
<td>Patching Work complete</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURFACE PREPARATION</th>
<th>Clearing &amp; marking of surface</th>
<th>Roughening</th>
<th>Fixing metal/lathe</th>
<th>Chicken mesh</th>
<th>Mortar level</th>
<th>Guides made</th>
<th>Surface moistened</th>
<th>Cement slurry</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIX &amp; WIP compound Checked as per specification</td>
<td>Costing/thickness</td>
<td>Groove at Joints Provided</td>
<td>Corners &amp; edges sharp &amp; at right Angles lines &amp; levels maintained</td>
<td>Surface leveled with</td>
<td>At straight edge</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FINISHING</th>
<th>Texture</th>
<th>Curing Days</th>
<th>Site cleared</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>W.O. ITEM</th>
<th>UNIT</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACTOR</td>
<td>DATE</td>
<td>SITE ENGR</td>
<td>DATE</td>
</tr>
<tr>
<td>CONTRACT NO.</td>
<td>REF DRAWING NO.</td>
<td>LOCATION BLOCK</td>
<td>FLOOR</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>----------------</td>
<td>-------</td>
</tr>
</tbody>
</table>

**EXCAVATION**
- Layout
  - □ Slope / cutting as per Specifications
  - □ Level

**LAYING/RCC**
- Bed concrete as per Specifications
  - □ RCC pipes as per Requirement
  - □ Jointing of Pipes
  - □ Boxing
    - □ Strata bore Dewatering
    - □ (wherever required)

**Manholes**
- Bricks as per specifications
  - □ Mortar as per specifications
  - □ Plastering
  - □ End of pipes plugged

**Back fillings**
- In layers

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>P.O.ITEM</th>
<th>UNIT</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACTOR</td>
<td>DATE</td>
<td>SITE ENGR</td>
<td>DATE</td>
</tr>
</tbody>
</table>
## NAME OF PROJECT

### CONTRACT

<table>
<thead>
<tr>
<th>REF DRAWING No.</th>
<th>LOCATION BLOCK</th>
<th>FLOOR</th>
<th>AREA</th>
</tr>
</thead>
</table>

### CHECK LIST FOR GRIT WASH

<table>
<thead>
<tr>
<th>SCAFFOLDING</th>
<th>Platform</th>
<th>Stability</th>
<th>Movement space</th>
<th>Approach to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Height</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SERVICE PROVISIONS</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All oiling work</td>
<td>All door/window frames</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Complete</td>
<td>Fixed in position</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURFACE PREPARATION</th>
<th>Roughening / hacking of surface done</th>
<th>Fixing metal / latex</th>
<th>Mortar level</th>
<th>Surface moistened/</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chicken mesh</td>
<td>Guides made</td>
<td>Cement slurry</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BASE PLASTER</th>
<th>Mix &amp; Wf compound</th>
<th>Coating / thickness</th>
<th>Corners &amp; edges sharp &amp; at right Angles lines &amp; levels maintained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checked against specs</td>
<td>As specified</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOP LAYER</th>
<th>Fixing of beading for grooves as per drawing</th>
<th>Lines and levels of grooves maintained</th>
<th>Mix as per specification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Washing of top layer</td>
<td>Washing with Acid (light)</td>
<td>Curing day</td>
</tr>
<tr>
<td></td>
<td>Textured of final surface</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>W.O. ITEM</th>
<th>UNIT</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACTOR</td>
<td>DATE</td>
<td>SITE ENGR</td>
<td>DATE</td>
</tr>
<tr>
<td>DATE</td>
<td>SITE INCHARGE</td>
<td>DATE</td>
<td></td>
</tr>
<tr>
<td>CONSULTANT</td>
<td>DATE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## CHECK LIST FOR WASTE/SOIL/VENT PIPES ETC.

<table>
<thead>
<tr>
<th>CONTRACT No.</th>
<th>LOCATION BLOCK</th>
<th>FLOOR</th>
<th>AREA</th>
</tr>
</thead>
</table>

### MATERIAL
- Make as specified
- Thickness / class as specified
- Length & dia as specified
- No cracks or holes visible

### LAYOUT
- Space distribution & Alignment as spec.
- Plumb of vertical line checked

### FIXING PIPE & FITTINGS
- Qty available for pipes fittings & jointing material as per size & fixing
- Cutting & jointing as specified
- Fixing of fittings & specials as specified
- Connection with corr. internal networks
- Temporary Plugging

### SMOKE TEST
- Open ends plugged
- Injection of smoke pressure
- No leakage of smoke
- Section is Ok

### SIGNATURE

<table>
<thead>
<tr>
<th>W.O. ITEM</th>
<th>UNIT</th>
<th>QTY.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CONTRACTOR</th>
<th>DATE</th>
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<th>SITE INCHARGE</th>
<th>DATE</th>
<th>CONSULTANT</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAYOUT</td>
<td>Sub base Prepared</td>
<td>Provision of Services checked</td>
<td>Provisioning (max size)</td>
<td>Separator strip</td>
<td>Level of Sub base checked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------</td>
<td>-------------------------------</td>
<td>-------------------------</td>
<td>-----------------</td>
<td>--------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slope</td>
<td>Provision checked</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BASE LAYER</th>
<th>Mix As specified</th>
<th>Water / cement Slurry applied</th>
<th>Cement concrete Thickness checked</th>
<th>Ramming / leveling Compaction done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evenness</td>
<td>Checked</td>
<td>Joints treatment if any, provided</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| TOP LAYER       | Mix As specified  | Proper leveling Done          | Trowelling finish proper      | Curing done                      |

| FINISHING        | Grinding          | Final grinding                | Repair applied at grinding stages | Polishing                        |

<table>
<thead>
<tr>
<th>W.O. ITEM</th>
<th>UNIT</th>
<th>QTY.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>DATE</th>
<th>SITE ENGR</th>
<th>DATE</th>
<th>SITE INCHARGE</th>
<th>DATE</th>
<th>CONSULTANT</th>
<th>DATE</th>
</tr>
</thead>
</table>

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### CHECK LIST FOR GLAZED TILE FLOORING

**NAME OF PROJECT**

**CONTRACT NO.**

<table>
<thead>
<tr>
<th>LAYOUT</th>
<th>Service provisions</th>
<th>Fixing pattern</th>
<th>Level of base &amp; dark</th>
<th>Finish level</th>
<th>Door &amp; window frames in position</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIX</td>
<td>Mix</td>
<td>Thickness</td>
<td>Watering /</td>
<td>Evenness</td>
<td>Verticality, corners At right angle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Layers</td>
<td>Cement slurry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAYING</td>
<td>Moistening of tiles</td>
<td>Plan position of cut pieces at corner</td>
<td>Cut to size Smooth edge</td>
<td>Chamfering of edges &amp; edge matching proper</td>
<td>Raking / jointing</td>
</tr>
<tr>
<td></td>
<td>Cement slurry adhesive</td>
<td>Level &amp; plumb checked</td>
<td>No hollow sound on tapping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINISHING</td>
<td>Grounding of joints</td>
<td></td>
<td>Curing of joints</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**W.O. ITEM UNIT QTY**

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>CONTRACTOR</th>
<th>DATE</th>
<th>SITE ENGR</th>
<th>DATE</th>
<th>SITE INCHARGE</th>
<th>DATE</th>
<th>CONSULTANT</th>
<th>DATE</th>
</tr>
</thead>
</table>

127
<table>
<thead>
<tr>
<th>MATERIAL AGGREGATE</th>
<th>Gradation as specified</th>
<th>Crushing strength as specified</th>
<th>No of layer</th>
<th>Thickness of layers starting from subgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREENINGS</td>
<td>Gradation as specified</td>
<td>Crushing strength as specified</td>
<td>waiting &amp; rolling as specified</td>
<td></td>
</tr>
<tr>
<td>MOORUM</td>
<td>Gradation as specified</td>
<td>Silt content as specified</td>
<td>Fill material</td>
<td></td>
</tr>
<tr>
<td>LAYOUT</td>
<td>Alignment of central line as per drawings and reference points</td>
<td>Marking of Carriage way edges as per drawings</td>
<td>Cross section levels of precedent</td>
<td>Layer recorded</td>
</tr>
<tr>
<td>WATER BOUND MACADAM</td>
<td>Templates placed of specified thickness</td>
<td>Placing, leveling of stone aggregate</td>
<td>Stone Screening spread as specified</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dry rolling as specified</td>
<td>Top cross section lands layer recorded</td>
<td>Application of moorum as specified</td>
<td>Wet rolling / compaction as specified</td>
</tr>
</tbody>
</table>

**W.O. ITEM | UNIT | QTY.**
ADDENDUM TO INSTRUCTIONS TO TENDERERS

The mode of submission of tender is through e-Bids only and accordingly Clause No.1.0 of ITT stands replaced by special instruction to bidder for e-tendering.

Kindly refer “Special instructions to Bidders for e-tendering” for downloading & uploading of Tender documents as per NIT.
Special instructions to Bidders for e-Tendering

Some Bidding related Information for this Tender (Sealed Bid)

The entire bid-submission would be online on Electronic Tendering System (ETS) unless otherwise specified for any other Submission mode.

Broad outline of submissions are as follows:

- Submission of Bid-Parts/ Envelopes
  - Technical-Part
  - Financial-Part

Submission of Documents:
The bidders are requested to Upload and submit online all the documents as per the list given below:

List of Documents:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Description of the Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Earnest Money Deposit in the form of DD or Bankers’ Cheque</td>
</tr>
<tr>
<td>2.</td>
<td>Tender fee inclusive of GST in the form of DD or Bankers’ Cheque (Separate tender processing fee to be paid online to MSTC)</td>
</tr>
<tr>
<td>3.</td>
<td>Experience certificate of having executed similar works (to be accompanied by TDS certificates in case the experience certificates issued by public limited companies listed on BS/NSE or private party) as per the NIT</td>
</tr>
<tr>
<td>4.</td>
<td>Balance Sheet and profit and loss statement for the Financial Years as per NIT</td>
</tr>
<tr>
<td>5.</td>
<td>Bank solvency certificate issued not earlier than one year of last date of submission of the tender</td>
</tr>
<tr>
<td>6.</td>
<td>PAN</td>
</tr>
<tr>
<td>7.</td>
<td>GST Registration Certificate</td>
</tr>
<tr>
<td>8.</td>
<td>PF Registration number</td>
</tr>
<tr>
<td>9.</td>
<td>Letter of Undertaking duly printed on the letter head of the tenderer as per the format in NIT</td>
</tr>
<tr>
<td>10.</td>
<td>Form of Tender duly printed on the letter head of the tenderer as per the format in NIT</td>
</tr>
<tr>
<td>11.</td>
<td>Copy of IT returns of assessment year as per NIT</td>
</tr>
<tr>
<td>12.</td>
<td>EMD/ Tender Fee exemption certificate (only for tenderers who intend to avail exemption of EMD/ Tender Fee) (if applicable as per NIT).</td>
</tr>
<tr>
<td>13.</td>
<td>Registration certificate/ Memorandum and Articles of Association/Partnership Deed/Affidavit, Incorporation Certificate for Proprietor(for Sole Proprietorship Tenderers)</td>
</tr>
<tr>
<td>14.</td>
<td>All tender documents duly signed and stamped or digitally signed.</td>
</tr>
<tr>
<td>15.</td>
<td>The certificate of site visit duly countersigned by EPI site official or in absence of which an undertaking is required to submit by the bidder.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>16.</td>
<td>Affidavit in respect of list of existing commitments and ongoing works as per Annexure-A of NIT</td>
</tr>
<tr>
<td>17.</td>
<td>Bid Capacity as per format (Annexure-B) given with the NIT</td>
</tr>
<tr>
<td>18.</td>
<td>Affidavit Performa as per format given along with the NIT</td>
</tr>
</tbody>
</table>

**B) Documents to be submitted in Physical form at the given address as per timeline given in NIT**

The Envelop shall bear (the project name, the tender no and the words (DO NOT OPEN BEFORE (due time & date))

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Earnest Money Deposit as per NIT</td>
</tr>
<tr>
<td>2.</td>
<td>Tender fee as per NIT</td>
</tr>
<tr>
<td>3.</td>
<td>Registration certificate/ Memorandum and Articles of Association/Partnership Deed/Affidavit, Incorporation Certificate for Proprietor (for Sole Proprietorship Tenderers)</td>
</tr>
<tr>
<td>4.</td>
<td>EMD/ Tender Fee exemption certificate if applicable.</td>
</tr>
<tr>
<td>5.</td>
<td>Affidavit Performa as per format given along with the NIT</td>
</tr>
<tr>
<td>6.</td>
<td>Letter of Undertaking duly printed on the letter head of the tenderer</td>
</tr>
<tr>
<td>7.</td>
<td>Form of Tender duly printed on the letter head of the tenderer</td>
</tr>
</tbody>
</table>

**Contact Persons Name & Address:**

General Manager  
Engineering Projects (India) Ltd.  
North Eastern Regional Office  
4th Floor, Hindustan Tower,  
Jawahar Nagar, National Highway No.37,  
Guwahati (Assam) -781022  
Tel No. 8486653300  
Email id- nerocontracts@gmail.com
Bidder’s guide for EPIL portal:

1. Use browser to go to [https://www.mstcecommerce.com/eprochome/EPIL](https://www.mstcecommerce.com/eprochome/EPIL)

Digital Signatures

To login into the portal both Users (EPIL Officials) and Bidders will require a Class 2 or 3 Digital Signature. Bidders should have at least Signing type Digital Signatures.

A digital signature can be obtained from any Certifying Authority (CA) as per the List of CAs issued by Controller of Certifying Authorities, Ministry of Electronics and Information Technology. The list is available at [http://www.cca.gov.in/cca/?q=licensed_ca.html](http://www.cca.gov.in/cca/?q=licensed_ca.html).

The list is as under:

1. Safescrypt
2. IDRBT
3. National Informatics Centre
4. TCS
5. GNFC
6. e Mudhra CA
7. CDAC CA
8. Capricorn CA
9. NSDL e-Gov CA

System Settings

1. This portal is compatible with multiple browsers (Google Chrome, Mozilla Firefox, Internet Explorer, Opera etc.)
2. On the system where this portal is being used, the user may open the portal and click on Install Components button on the left side as shown below:
3. On clicking the button, a new window will open as shown below:

4. In this window, please save the MSTCSIGNER28082018_v2.exe file and install it.
5. Additionally, please click on Add to chrome button, to add the chrome extension, as shown below:

   For other browsers please install the extension as applicable.

2. On the right side of the page click on Register as a Vendor:
3. Fill the form that appears to create username and password.

4. Once the registration is done, login with your user name and password:

5. System will ask you to verify your digital signature

6. Press Ok and select your digital signature from the List:
7. Your digital signature will be verified

8. Once login is complete, a bidder can access My Menu through the left side of the page:

9. Here click on Download NIT/Corrigendum button to download the NIT/Corrigendums. Select Event number and click on download to download the files:

10. To submit the bid a bidder can proceed to Bid Floor through the left side My menu. In Bid Floor click on live events to view a list of Live events. In live events select the tender number where you wish to submit a bid.
11. On clicking the event number, if the bidder has not paid transaction fee, system will prompt them to pay the transaction fee. They can pay the transaction fee by going to Transaction Fee payment link in their login, and pay the same through online payment (debit card, credit card, net banking etc) or RTGS/NEFT (Challan).

12. Tender can be of multiple types with price bid uploading in Excel or Technical-Price type. The bid floor for each type of event will change automatically.

On clicking the tender number one of the following screens will appear:

For 2 cover with price bid in excel

![E-Tender Technical Cum Price Bid](image)

13. For each type of event the event details including start time and close time the details will be given on the top of the page.

14. To submit the tender the bidder has to start from top left and submit the details one by one.
15. For 2 cover with price bid in excel, the bidder has to submit technical bid, by filling the details and clicking the save button.

![Technical Terms Table]

a) After the technical bid is saved, a bidder can proceed to uploading documents through the link upload docs:

![Upload Docs Link]

b) Please note that under no circumstance the price bid excel has to be uploaded here.

c) After the documents have been uploaded, the bidder can click on download excel to download the excel format.

d) Fill up the excel sheet as per the details given therein and tender document.

e) To upload the filled up excel click on Upload Price Button, click on browse to select the file and then click on Upload and Save encrypt file.

![Upload Excel File]

f) The bidder can then click on final submit to finally submit the bid. In case of any amendments after final submit, click on delete bid button to delete the techno-commercial and price bids and resubmit the same. Please note that at the end the bid must be final submit, otherwise the same will not be considered.

16. For E-Tender Technical Cum Price Bid:

a. In the manner similar to above the bidder has to fill up Common terms, then press save button to submit.
b. Then the bidder has to upload documents as per the list shown therein.
c. Once the documents are uploaded the bidder has to submit the Technical and Price bids.
d. The bidder can then click on final submit to finally submit the bid. In case of any amendments after final submit, click on delete bid button to delete the techno-commercial and price bids and resubmit the same. Please note that at the end the bid must be final submit, otherwise the same will not be considered.

Bidder’s may note that in each case using the Delete bid button will only delete the bids and then the bidder can resubmit upload tender closing time.

Using the withdraw button the bid will be withdrawn and the bidder will not be allowed to submit any further bid in that event.

For any assistance regarding the Tender Document and/or term and conditions the bidders may contact at EPIL:

For any assistance during bid submission, system settings etc. bidders may contact at MSTC:

<table>
<thead>
<tr>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>03322901004, 01123212357, 01123215163, 01123217850</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:mstcnro@mstcindia.co.in">mstcnro@mstcindia.co.in</a></td>
</tr>
</tbody>
</table>

Please mention “Helpdesk” as subject while sending emails

<table>
<thead>
<tr>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 AM to 5:30 PM on all working days.</td>
</tr>
</tbody>
</table>
MEMORANDUM

(ENCLOSURE TO FORM OF TENDER)

REF.: Tender For Construction of Boundary wall for Sector HQ at Khatla, Mizoram

Ref.: NIT No. NERO/CON/ASR/KHATIA/352A Dated: 14.06.2019

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>Cl. No.</th>
<th>Values / Description to be applicable for relevant clause(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Name of Work</td>
<td></td>
<td>Tender For Construction of Boundary wall for Sector HQ at Khatla, Mizoram</td>
</tr>
<tr>
<td>ii)</td>
<td>Owner / Client / Employer</td>
<td></td>
<td>HQ, DGAR, Shillong.</td>
</tr>
<tr>
<td>iii)</td>
<td>Type of Tender</td>
<td></td>
<td>Percentage Rate Basis</td>
</tr>
<tr>
<td>iv)</td>
<td>Earnest Money Deposit</td>
<td>NIT</td>
<td>₹ 1,57,466/-</td>
</tr>
<tr>
<td>v)</td>
<td>Estimated Cost</td>
<td>NIT</td>
<td>₹ 1,57,46,590 /-</td>
</tr>
<tr>
<td>vi)</td>
<td>Time for Completion of Work</td>
<td>NIT</td>
<td>Total work to be completed in 18 (Eighteen) months in accordance with the time schedule of completion of work in the tender documents.</td>
</tr>
<tr>
<td>vii)</td>
<td>Mobilization Advance</td>
<td>8.0</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>viii)</td>
<td>Interest Rate on Mobilization Advance</td>
<td>8.0</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>ix)</td>
<td>Number of Installments for recovery of Mobilization Advance</td>
<td>8.0</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>x)</td>
<td>Schedule of Rates applicable</td>
<td></td>
<td>DSR 2012 updated with Cost Index 77%</td>
</tr>
<tr>
<td>xi)</td>
<td>Validity of Tender</td>
<td>4.0</td>
<td>90 (Ninety) Days from the date of opening of Price Bid</td>
</tr>
<tr>
<td>xii)</td>
<td>Security Deposit cum Performance Guarantee</td>
<td>9.0</td>
<td>5.00% (five percent only) of contract value within 10 days from the date of issue of letter /FAX/ e-mail of intent of acceptance of tender.</td>
</tr>
</tbody>
</table>

Signature of Contractor

EPI
xiii) Retention Money 10.0 5.00% (five percent only) of the contract amount which shall be deducted in the manner set out in Clause nos. 7.0 and 10.0 of GCC of EPI.

xiv) Time allowed for starting the work 43.0 The date of start of contract shall be reckoned 10 days from the date of issue of letter/FAX/email of intent of acceptance of tender.

xv) Defect Liability Period 74.0 12 (twelve) months from the date of taking over of works.

xvi) Arbitration 76.0 Amended vide Clause 21 of Additional Condition of Contract.

xvii) Jurisdiction 76.3 Courts in Guwahati

xviii) Escalation/ Price variation 16.0 Not applicable.

SIGNATURE OF TENDERER:

NAME (CAPITAL LETTERS):

OCCUPATION:

ADDRESS:

__________________________________________________________

__________________________________________________________

__________________________________________________________

SEAL OF TENDERER
# Bidder Information
(Needs to be filled with clear bold letters)

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Name*</td>
<td></td>
</tr>
<tr>
<td>Make / Brand*</td>
<td></td>
</tr>
<tr>
<td>Registration Number*</td>
<td></td>
</tr>
<tr>
<td>Registered Address*</td>
<td></td>
</tr>
<tr>
<td>Name of Partners/Directors</td>
<td></td>
</tr>
<tr>
<td>Bidder type*</td>
<td>Indian/Foreign</td>
</tr>
<tr>
<td>City*</td>
<td></td>
</tr>
<tr>
<td>State*</td>
<td></td>
</tr>
<tr>
<td>Country*</td>
<td></td>
</tr>
<tr>
<td>Postal code*</td>
<td></td>
</tr>
<tr>
<td>PAN/TAN / Number*</td>
<td>(PAN/TAN number must have 10 characters, e.g. AESTG2458A) For bidders who do not have PAN/TAN number may enter TEMPZ9999 as the PAN/TAN number.</td>
</tr>
<tr>
<td>GSTIN Registration Number*</td>
<td></td>
</tr>
<tr>
<td>Company's Establishment Year</td>
<td></td>
</tr>
<tr>
<td>Company's Nature of business*</td>
<td></td>
</tr>
<tr>
<td>Company's Legal status*</td>
<td>Limited company/ Undertaking/Joint venture/Partnership/others</td>
</tr>
</tbody>
</table>

Signature of Contractor
<table>
<thead>
<tr>
<th><strong>Company Category</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro unit as per MSME/ Small</td>
</tr>
<tr>
<td>unit as per MSME/ Medium unit</td>
</tr>
<tr>
<td>as per MSME/ Ancillary unit/Project of affected person of this company/SSI/others</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Contact Details</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Company’s Contact Person Details</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Title</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr/Mrs/Dr/Shree/Ms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Contact person Name</strong>*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Date of Birth</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(DD/MM/YYYY)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Correspondence Email</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Correspondence Email ID can be same as your Login ID. All The mail correspondence will be sent only to the Correspondence Email ID)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Designation</strong></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Phone</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Phone details eg:+91–xx-xxxxxxx)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mobile</strong>*</th>
</tr>
</thead>
</table>

*Mandatory information (must be filled by the bidders)*

**Signature of Contractor**
LETTER OF UNDERTAKING
(TO BE ENCLOSED IN ENVELOPE-1 ALONG WITH EMD)
(TO BE TYPED ON LETTER HEAD)

To,
General Manager (Contract)
Engineering Projects (India) Ltd.
North Eastern Regional Office
4th Floor, Hindustan Tower,
Jawahar Nagar, National Highway No.37,
Guwahati (Assam) -781022

NIT No.: NERO/CON/ASR/KHATIA/352A Dated: 14.06.2019

Sir,

UNDERTAKING FOR ACCEPTANCE OF TENDER CONDITIONS

1. The Tender Documents for the work as mentioned in “Memorandum” to “Form of Tender” have been issued to us by ENGINEERING PROJECTS (INDIA) LIMITED and we hereby unconditionally accept the tender conditions and Tender Documents in its entirely for the above work.

2. The contents of clause 1.2 and 1.3 of the Tender Documents (Instructions to Tenderers) have been noted wherein it is clarified that after unconditionally accepting the tender conditions in its entirety, it is not permissible to put any remarks(s)/condition(s) (except unconditional rebate on price, if any) in the ‘Price-Bid’ enclosed in “Envelope-2” and the same has been followed in the present case. In case this provision of the Tender is found violated at any time after opening “Envelope-2”, We agree that our tender shall be summarily rejected and EPI shall, without prejudice to any other right or remedy beat liberty to forfeit the full said Earnest Money absolutely.

3. The required Earnest Money for this work is enclosed herewith.

Yours faithfully,

………………………………………
Authorized Signatory

………………………………………
Seal of Tenderer

Dated: …………………..
FORM OF TENDER
(TO BE TYPED ON LETTER HEAD)

To,

General Manager (Contract)
Engineering Projects (India) Ltd.
North Eastern Regional Office
4th Floor, Hindustan Tower,
Jawahar Nagar, National Highway No.37,
Guwahati (Assam) -781022

REF.:  Tender For Construction of Boundary Wall for Sector HQ at Khatla, Mizoram

NIT No. NERO/CON/ASR/KHATIA/352A Dated: 14.06.2019

1. We hereby tender for execution of work as mentioned in “Memorandum” to this “Form of Tender” as per Tender Documents within the time schedule of completion of work as per separately signed and accepted rates in the Bill of Quantities quoted by us for the whole work in accordance with the Notice Inviting Tender, Conditions of Contract, Specifications of materials and workmanship, Bill of Quantities Drawings, Time Schedule for completion of jobs, and other documents and papers, all as detailed in Tender Documents.

2. It is agreed that the time stipulated for jobs and completion of work in all respects and in different stages mentioned in the “Time Schedule for completion of jobs” and signed and accepted by us is the essence of the contract. We agree that in case of failure on my/our part to strictly observe the time of completion mentioned for jobs and the final completion of work in all respects according to the schedule set out in the said “Time schedule for completion of jobs” and stipulations contained in the contract, the recovery shall be made from us as specified therein. In exceptional circumstances extension of time which shall always be in writing may, however be granted by EPI at its entire discretion for some items, and We agree that such extension of time will not be counted for the final completion of work as stipulated in the said “Time schedule of completion of jobs”.

3. We agree to pay the Earnest Money, Security Deposit cum Performance Guarantee, Retention Money and accept the terms and conditions as laid down in the “Memorandum” to this “Form of Tender”.

4. Should this Tender be accepted, We agree to abide by and fulfill all terms and conditions referred to above and as conditioned in Tender Documents elsewhere and in default thereof, allow EPI to forfeit and pay EPI, or its successors or its authorized nominees such sums of money as are stipulated in the Tender Documents.
5. We hereby pay the earnest money amount as mentioned in the “Memorandum” to this “Form of Tender” in favour of Engineering Projects (India) Limited payable at place as mentioned in the “NIT/ITT”.

6. If we fail to commence the work within 10 days of the date of issue of Letter of intent and/or We fail to sign the agreement as per Clause 84 of General Conditions of Contract and/or We fail to submit Security Deposit cum Performance Guarantee as per Clause 9.0 & 9.1 of General Conditions of Contract, we agree that EPI shall, without prejudice to any other right or remedy, be at liberty to cancel the Letter of Intent and to forfeit the said earnest money as specified above.

7. We are also enclosing herewith the Letter of Undertaking on the prescribed proforma as referred to in condition of NIT.

Date the ……………………………day of __________________________________________________________

SIGNATURE OF TENDERER ________________________________________________________________

NAME (CAPITAL LETTERS):_____________________________________________________________

OCCUPATION ______________________________________________________________

ADDRESS ______________________________________________________________

SEAL OF TENDERER
AFFIDAVIT

(To be submitted by bidder on non-judicial stamp paper of Rs. 100/- (Rupees Hundred only) duly attested by Notary Public)

(To be submitted in Envelop-1 i.e. Technical bid)

Affidavit of Mr.………………………………………………… S/o……………………………
R/o…………………………………….

I, the deponent above named do hereby solemnly affirm and declare as under:

1. That I am the Proprietor/Authorized signatory of M/s ……………….. Having its Head Office/Regd. Office at …………………………………………………………………………………………………………………………………………………………………………………

2. That the information/documents/Experience certificates submitted by M/s……………………....................... along with the tender for…………………………………….. To EPI are genuine, true and nothing has been concealed.

3. I shall have no objection in case EPI verifies them from issuing authority (ies). I shall also have no objection in providing the original copy of the document(s), in case EPI demand so for verification.

4. I hereby confirm that in case, any document, information & / or certificate submitted by me found to be incorrect / false / fabricated, EPI at its discretion may disqualify / reject / terminate the bid/contract and also forfeit the EMD / All dues.

5. I shall have no objection in case EPI verifies any or all Bank Guarantee(s) under any of the clause(s) of Contract including those issued towards EMD and Performance Guarantee from the Zonal Branch /office issuing Bank and I/We shall have no right or claim on my submitted EMD before EPI receives said verification.

6. That the Bank Guarantee issued against the EMD issued by (name and address of the Bank) is genuine and if found at any stage to be incorrect / false / fabricated, EPI shall reject my bid, cancel pre-qualification and debar me from participating in any future tender for three years.

Page 1 of 2
I, ..................................the Proprietor/ Authorised signatory of M/s...........................................do hereby confirm that the contents of the above Affidavit are true to my knowledge and nothing has been concealed there from................................ and that no part of it is false.

Verified at........................... this............................... day of..............................................

DEPONENT

ATTESTED BY (NOTARY PUBLIC)
List of Drawings

Tender for: Construction of Boundary wall for Sect HQ at Khatla, Mizoram

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Title of Drawing</th>
<th>Drawing No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boundary wall and Gate</td>
<td>AR-01</td>
</tr>
</tbody>
</table>

Note: The enclosed drawings are for tender purpose and for general guidance only. The works shall be executed as per the construction drawings to be issued during course of work and as per instructions of the Engineer-in-charge.

(Signature and seal of the Tenderer)
SPECIFICATION FOR CIVIL WORKS

1.0   GENERAL

1.01  Unless otherwise specified in the nomenclature of individual item or in the specifications, for all works mentioned in this tender, the specifications and mode of measurements shall be in accordance with C.P.W.D. specifications 2009 Volume I to VI with upto date correction slips upto the date of tender. For the item not covered under CPWD specifications mentioned above, the work shall be executed as per latest relevant standards / codes published by B.I.S (formerly ISI) inclusive of all amendments issued thereto or revision thereof, if any, upto the date of submission of tender.

All mandatory tests specified in CPWD specifications 2009 Volume I to VI with upto date correction slips shall be carried out from the approved laboratories as desired by Architect / Engineer in charge of EPI. Testing charges including cartage, conveyance etc what so ever shall be borne by the successful bidder. If after any such test and in the opinion of the Architect / Engineer In-charge of EPI any work is found defective or unsound, the same shall have to be dismantled and to be redone by the successful bidder at their own cost.

In case of BIS (formerly ISI) codes / specifications are not available for any item of work the decision of the Engineer based on acceptable sound engineering practice and local usage shall be final and binding on the successful bidder.

1.02  The rates for different items of work shall be for all heights, lifts, leads and depths except where otherwise specified in the item of work or in additional conditions appended with the tender.

1.03  The work shall be carried out in accordance with the approved drawings. The drawings shall have to be properly co-related before executing the work. In case of any difference noticed between the drawings, final decision, in writing of the Engineer-in-Charge shall be obtained by the contractor. For items, where so required, samples shall be prepared before starting the particular items of work for prior approval of the Engineer and nothing extra shall be payable on this account.

1.04  Unless otherwise specified in the bill of quantities or drawings, the rates for all the items of work shall be considered as inclusive of pumping out water if required for which no extra payment will be made. This will include water encountered from any source such as rains, floods, sub-soil water table being high or due to any other cause whatsoever.

1.05  Any cement slurry added over base surface (or) for continuation of concreting for bond the cost for the same is deemed to have in built in the item unless otherwise / explicitly stated and nothing extra shall be payable or extra cement considered for consumption on this account.

1.06  The rates for all items in which the use of cement is involved in inclusive of charges for curing.
1.07 The contractor shall clear the site thoroughly of all scaffolding materials and rubbish etc. left out of his work dressed the site to the satisfaction of the Engineer before the work is considered as complete.

1.08 The rate quoted for all brick / concrete work shall be deemed to include making openings and making good these with the same specifications as shown in drawings and / or as directed. No extra payment shall be made to the contractor on this account.

1.09 The quoted rate shall be for finished items and shall be complete in all respects including the cost of all material, labour tools & plants, machinery etc. all taxes, duties, levies, octroi, royalty charges, statutory levies, cess etc. applicable from time to time and any other item required but not mentioned here involved in the operations described above. EPI shall not be supplying any materials, labour, plant etc. unless explicitly mentioned so.

1.10 Random Rubble Masonry retaining wall shall be constructed as per approve drawings based on different heights at different locations and payment for the same shall be made as per the rates of respective items available in the Bill of Quantities.

1.11 Rate for plastering work (excluding washed stone grit plaster on external wall surface) shall include for making grooves, bands etc. wherever required and nothing extra shall be paid for the same.

1.12 Rates for all concrete / plaster work shall include for making drip course molding, grooves etc. wherever required and nothing extra shall be paid for the same.

2.0 SCOPE OF WORK

- RCC framed structure incorporating recommendations from latest CPWD Specifications / National Building Codes.
- RCC Raft foundation / isolated footing as per latest CPWD Specifications / National Building Codes.
- Infill to frame with First Class Brickwork as per CPWD Specification / relevant BIS Code.
- Random Rubble Masonry / Stone Masonry Work as per latest CPWD Specifications / National Building Codes.

3.0 CIVIL FINISHES

Civil finishes shall be as mentioned in the relevant drawings, specifications and schedule of finishes.
3.1 The bidder shall be responsible for structural soundness of the building / project in all respect and a certificate thereon shall be furnished by the bidder to EPI on the completion of the work.

4.0 MATERIAL

All materials shall be of standard quality and from approved manufacturer, conforming to Indian Standards or equivalent and shall have IS Mark as far as possible unless otherwise approved by Engineer-in-Charge. The contractor shall get all materials approved by Engineer-in-Charge prior to procurement and use. The contractor shall furnish manufacturers certificates, for the material supplied by him when asked for. Further to that he shall get all the materials tested from an approved test house, if asked for by the Engineer-in-Charge. The contractor shall get all materials approved by Engineer-in-Charge prior to procurement and use. The contractor shall furnish manufacturers certificates, for the material supplied by him when asked for. Further to that he shall get all the materials tested from an approved test house, if asked for by the Engineer-in-Charge. The cost for all tests and test certificates shall be borne by the contractor. No separate payment shall be made for the testing. The Engineer-in-Charge shall have the right to determine whether all or any material are suitable. If any material procured or brought to site found not conforming to specifications and satisfaction of Engineer-in-Charge, the contractor shall have to remove the same immediately from the site at his own expense and without any claim for compensation due to such rejection.

The contractor shall submit documentary evidence e.g. challans, bills etc. against the construction materials brought to site as a check to ensure that the required quantities as required for execution of works as per specification have been brought to site for incorporation in the work.

The contractor shall ensure that the bought out materials are brought to site in original sealed containers or packing bearing name of manufacturer and brand.

4.1 CEMENT

General: The cement shall be ordinary Portland cement of 43/53 grade conforming to IS: 8112 / IS: 12269 of approved manufacturer, as applicable for design and drawing.

4.1.1 TESTS AFTER DELIVERY

Each consignment of cement may, after delivery at site and at the discretion of the Engineer-in-Charge, be subjected to any or all of the tests and analysis required by the relevant Indian Standard Specifications. The contractor shall bear the cost of all such tests. Engineer-in-Charge may reject any cement as a result of any tests thereof, notwithstanding the manufacturer’s certificate.

4.2 REINFORCEMENT STEEL

General: Thermo Mechanically Treated bars conforming to IS : 1786 from approved manufacturers (BIS approved) shall be used.
4.3 BRICKS

The bricks shall be of approved quality having a minimum compressive strength of 75 Kg/cm², best quality locally available, well burnt, sound and of uniform quality and colour. These shall be free from salt and of standard size and shall conform to IS: 1077.

The water absorption shall not be more 20% of its dry weight when soaked in cold water for 24 hours, as per IS : 3102. The tolerance limit shall be 3% for absorption.

The brick sample taken at random from the lot shall be deposited with, and be approved by the Engineer-in-Charge before being used. All subsequent deliveries shall be upto the standards of the approved sample.

4.4 COARSE AGGREGATE

General: Aggregate of sizes between 4.75 mms to 150 mms will be termed as coarse aggregate. Coarse aggregate from approved quarries and conforming to IS: 383 will only be allowed to be used for the works. Coarse aggregate for reinforced concrete work shall consists of approved broken stone aggregate free from flat laminated or elongated pieces and shall be free from any organic material and shall be within the limits of the relative grading in IS – 383 table – II. Unless otherwise shown on the drawings all coarse aggregate in reinforced concrete shall be graded crushed stone aggregate of 20mm nominal size.

For plain cement concrete 40 mm down / 20 mm down coarse aggregate as per IS : 383 shall be used as per instructions of Engineer-in-Charge.

For damp proof coarse / screed concrete above roof slab 12 mm down coarse aggregate as per IS : 383 shall be used.

4.5 FINE AGGREGATE

Aggregate smaller than 4.75mm and within the grading limits and other requirements set in IS: 383 is termed as Fine aggregate or sand. Fine aggregate from approved sources and conforming to the above IS specification shall only be allowed to be used for the works.

For reinforced concrete, plain cement concrete, Brick work, damp proof coarse, screed concrete etc. sand of zone I & II shall only be used. Sand shall be clean river or pit sand of approved quality and shall be free from salts, earth dust or others impurities. It shall be washed with clean water and not more than 5% fine materials shall be allowed by settlement in water and passing through 10,000 mesh sieve.

For plasters sand of zone – II / zone – III shall be used as per instructions of Engineer-in-Charge.

4.6 Water: Water shall be clean and reasonably free from injurious deleterious materials, generally potable water shall be used.

5.0 OTHER MATERIALS
All materials not fully specified herein and which may be used in the work shall be approved by the Engineer-in-Charge and he shall have right to determine whether all or any of the materials offered or delivered for use in the work are suitable for the purpose. Contractor shall give the samples of materials to Engineer-in-Charge and shall get it approved before procurement and use.

6.0 **PLAIN AND REINFORCED CONCRETE**

This section of the specification deals with cement concrete plain or reinforced for general use and covers the requirements for concrete mix design, strength and quality, pouring at all levels, form work, protection, covering, finishing, admixtures, inserts, and other miscellaneous works. The provision of the latest version of IS : 456 shall be compiled with unless permitted otherwise and any other Indian Standard Code (Latest Revision) shall form part of the specification to the extent it has referred to or applicable within this specification.

6.1 **GRADE OF CONCRETE**

All reinforced concrete shall be either nominal mix concrete or design mix concrete and of grade M – 20 unless otherwise specified in drawing.

6.2 **NOMINAL MIX CONCRETE**

In proportioning concrete, the minimum quantity of cement shall be as specified in Table I of this specification and the amount to be actually used shall be determined by weight. The quantities of fine and coarse aggregates may be determined by volume, but preferably should be by weight. If fine aggregates are moist, allowance shall be made for bulking in case of volume batching in accordance with IS: 2386 (Part III). Allowance shall also be made for surface water present in the aggregates when computing the water content. The amount of surface water shall be determined by one of the field methods described in IS: 2386 (Part III). All the above data shall be maintained properly to the satisfaction of the Engineer-in-Charge.

The water cement ratio shall not be more than specified in IS : 456 (Latest edition) for respective grade of concrete. The cement in any nominal mix concrete proportion shall be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction so that the water cement ratio specified for a particular grade of concrete is not exceeded. No extra payment shall be made to the contractor for use of the extra cement. If nominal mix concrete made in accordance with the proportion given in IS : 456 for a particular grade dose not yield the specified strength and fails to satisfy the requirements of “Acceptance Criteria” for concrete as specified in IS : 456 the cement content shall be increased as directed by the Engineer-in-Charge to obtain the specified strength at no extra cost.

The use of richer mix shall be continued until the Engineer-in-Charge instructs otherwise.

Nominal mix concrete proportioned for a given specified grade including cases where the Engineer-in-Charge directs use of additional cement over the quantity specified for the
particular grade, shall not, however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified for the desired grade.

6.3 **MIX PROPORTIONS**

The mix proportions for grades of concrete specified in drawings shall be designed to obtain strength corresponding to the values specified in IS : 456 for respective grades of concrete.

Preliminary tests, as specified in the IS code or as required by the Engineer-in-Charge, shall be carried out sufficiently ahead of the actual commencement of the work with different grades of concrete made from representative sample of aggregate and cement expected to be used on the job to ascertain the ratios by weight of cement to total aggregate, of fine to coarse aggregate and water cement ratio required to produce a concrete having specified strength and sufficient workability to enable it to be well consolidated and to be worked into corners of shuttering and around the reinforcement.

### TABLE – I

**MINIMUM CEMENT CONTENT SPECIFIED FOR DIFFERENT GRADES OF CONCRETE**

<table>
<thead>
<tr>
<th>Grade of Concrete</th>
<th>Minimum cement content per Cum of finished concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>M – 10</td>
<td>236 Kg.</td>
</tr>
<tr>
<td>M – 15</td>
<td>310 Kg.</td>
</tr>
<tr>
<td>M – 20</td>
<td>360 Kg.</td>
</tr>
<tr>
<td>M – 25</td>
<td>410 Kg.</td>
</tr>
<tr>
<td>M – 30</td>
<td>500 Kg.</td>
</tr>
</tbody>
</table>

### LIMITS OF CONSISTENCY

<table>
<thead>
<tr>
<th>Degree of Workability</th>
<th>Slump in mm, with standard code as per IS : 1199</th>
<th>Use for which concrete is suitable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>Very Low</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Low</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Medium</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note:** Not with standing the above, the slump to be obtained for work in progress shall be as per the instructions of the Engineer-in-Charge.

6.4 **WORKMANSHIP**
All workmanship shall be according to the latest and best possible standard.

Before starting any pour the contractor shall obtain the approval of the Engineer-in-Charge. He shall obtain complete instruction about the materials and proportion to be used, slump, workability, quantity of water per unit weight of cement, number of test cubes to be taken, type of finishing to be done, any admixture to be added, any limitation on size of pour and stopping of in case of premature stopping of pours.

Before pouring any concrete the reinforcement steel, shuttering, staging, inserts etc. are to be got checked by the Engineer-In-Charge of EPI, to be recorded in the stage passing register and to be got signed by Engineer-In-Charge of EPI. Quality of stone chips, sand etc. and availability of the same in adequate quantity shall also to be got checked by Engineer-In-Charge of EPI.

6.5 MIXING OF CONCRETE

All concrete shall be mixed in a mechanically operated mixer of minimum capacity of 14 / 10 and including mechanically operated hopper capable of ensuring of uniform distribution of the materials throughout the mass. The proportion of fine and course aggregate, cement and water shall be as determined by the mix design or according to the fixed proportions in case of nominal mix concrete and shall be approved by the Engineer-in-Charge. The quantities of cement, fine aggregate and course aggregates shall be determined by weight. The water shall be measured accordingly after giving proper allowance for surface water present in the aggregate for which regular check shall be made by the contractors.

Water shall not be added to the mix until all the cement and aggregates constituting the batch are already in the drum and dry mixed for at least one minute. Mixing of each batch shall be continued until there is a uniform distribution of the materials but in no case shall mixing be done for less than two (2) minutes and at least forty (40) revolutions after all materials and water are in the drum. When absorbent aggregates are used or when the mix is very dry, the mixing time shall be extended as be directed by the Engineer-in-Charge. Mixer shall not be loaded above their rated capacity as it prevents through mixing. If there is segregation after unloading from the mixer the concrete should be remixed.

The entire contents of the drum shall be discharged before the ingredients for the next batch are fed into the drum. No partly set or remixed or excessively wet concrete shall be used and it shall be immediately removed from the site. Each time the work stops, the mixer shall be thoroughly cleaned and when the next mixing commences, the first batch shall have 10% additional cement at no extra cost to the owner to allow for loss in the drum.
6.6 PLACEMENT OF CONCRETE

Form work and reinforcement shall be approved in writing by the Engineer-in-Charge before concrete is placed. The forms shall be well wetted and all shavings, dirt and water that may have collected at the bottom shall be removed before concrete is placed. Concrete shall be deposited in its final position without segregation, re-handling or flowing. The interval between adding the water to the dry materials in the mixer and the completion of the final placing including compaction of the concrete shall be well within the initial setting time for the type of cement in use or as directed by the Engineer-in-Charge.

As far as possible, concrete shall be placed in formwork by means approved by the Engineer-in-Charge and shall not be dropped from a height or handled in a manner which may cause segregation. Any drop over 180 cm shall be approved by the Engineer-in-Charge. Once the concrete is deposited in its final position, it shall not be disturbed. Care should be taken to avoid displacement of reinforcement or movement of form work.

The placing of concrete shall be a continuous operation with no interruption in excess of 30 minutes between the placing of continuous portions of concrete.

After the concrete has been placed it shall be spreaded and thoroughly compacted by approved mechanical vibration to a maximum subsidence without segregation and thoroughly worked around reinforcement or other embedded fixtures to correct form and shape. Vibrators shall not be used for pushing and shoveling concrete into adjoining areas. Vibrators must be operated by experienced men and over-vibration shall not be permitted. Hand tamping in some cases may be allowed subject to the approval to ensure that the inserts, fixtures, reinforcement and form work are not displaced or disturbed during placing of concrete. No concrete shall be placed in open while washing of cement and sand, the concrete shall be entirely removed immediately. Suitable precautions shall be taken in advance to guard against rains before leaving the fresh concrete unattended. No accumulation of water shall be permitted on or around freshly laid concrete. Slabs, Beams and similar members shall be poured in one operation normally. In special circumstances with the permission of Engineer-in-Charge these can be poured in horizontal layers not exceeding fifty (50) cm in depth. When poured in layers, it must be ensured that the under layer, is not already hardened. Bleeding of under layer if any, shall be effectively removed. Moulding, throating, drip courses, etc., shall be poured as shown in the drawing or as desired by the Engineer-in-Charge. Holes shall be left in concrete as shown on the approved drawings or as directed by the Engineer-in-Charge.

Whenever vibration has to be applied externally the design of formwork and the disposition of vibrators shall receive special consideration to ensure efficient compaction and to avoid surface blemishes.

6.7 CONSTRUCTION JOINTS

Whenever work is to be interrupted, the concrete shall be rebated at the joint to such shape and size as may be required by the Engineer-in-Charge or shown on the drawings. All vertical construction joints shall be made with stop boards, which are rigidly fixed and slotted to allow for the passage or reinforcement steel. If desired by the Engineer-in-Charge, keys and or dowel bars shall be provided if so specified on the drawings or desired by the Engineer-in-Charge. Constructions joints shall be provided in positions as shown or described, the joints shall be in accordance with following:
i) In a column, the joint shall be formed about 75 mm below the lowest soffit of the beams framing into it.

ii) Concrete in a beam shall be placed throughout without a joint, but if the provision of a joint is unavoidable, the joint shall be vertical and at the middle of the span.

iii) A joint in a suspended floor slab shall be vertical, at one of the quarter points of the span and at right angle to the principal reinforcement.

iv) In forming a joint, concrete shall not be allowed to slope away to thin edge. The locations of construction joints shall be planned by the contractor well in advance of pouring and shall be got approved from the Engineer-in-Charge.

v) Construction joints in foundation of any equipment shall not be provided without specific concurrence of the Engineer-in-Charge.

vi) Before fresh concrete is placed, the cement skin of the partially hardened concrete shall be thoroughly removed and surface made rough by hacking, sand blasting, water jetting, air jetting or any other methods as directed by Engineer-in-Charge. The rough surface shall be thoroughly wetted for about two hours and shall be dried and coated with 1:1 freshly mixed cement sand slurry immediately before placing the new concrete. The new concrete shall be worked against the prepared surface before the slurry etc. Special care shall be taken to see that the first layer of concrete placed after a construction joint is thoroughly rammed against the existing layer. Old joints during pour shall be treated with 1:1 freshly made cement sand slurry only after removing all loose materials.

6.8 CASTING OF SUNKEN SLAB

12 mm long or 6 mm long polyester fibres of approved make shall be mixed with cement @ 0.25% by weight of cement i.e. 125 gms per 50 Kg bag of cement while casting of RCC slab at sunken portion.

6.9 REPAIR AND FINISHES TO CONCRETE

All concrete surface either cast-on-situ or pre-cast shall have even, clean finish, free from honey combs, air bubbles, fine or other blemishes. The formwork, joint marks for concrete work exposed to view shall be rubbed out with carborundum stone and defects patched up with a paste of 1 part sand and 1 part cement and cured. The finish shall be made to the satisfaction of the Engineer-in-Charge.

Concrete surface to be subsequently plastered or where brickwork shall be built against it shall be adequately hacked as soon as the form is stripped off so that proper bond can develop.
6.10 **CURING AND PROTECTION OF CONCRETE**

Newly placed concrete shall be protected by approved means from rain, sun & wind. Concrete placed below ground level shall be protected from falling earth during and after placing. Concrete placed in ground containing deleterious substances shall be kept free from contact with such ground or with water draining from such ground during placing of concrete for a period of at least three days or as otherwise instructed by the Engineer-in-Charge. The ground water around newly poured concrete shall be kept to an approved level by pumping or other approved means of drainage. Adequate steps shall be taken to protect immature concrete from drainage by debris, excessive loading, vibration etc., which may impair the strength and durability of the concrete.

All fresh concrete shall be covered with a layer of Hessian or similar absorbent materials, and kept constantly wet for a period of fourteen days or more from the date of placing of concrete as per directions of the Engineer-in-Charge. Curing can also be done by ponding. Concrete slabs and floors shall be cured by flooding with water of minimum 25 mm depth for the period mentioned above. Steps shall also be taken to protect immature concrete from damage by debris, excessive loading, vibrations, abrasion, deleterious ground water, mixing with earth or foreign materials, floatation etc. that may impair the strength and durability of the concrete. Approved curing compounds may be used in view of moist curing with the permission of the Engineer-in-Charge. Such compounds shall be applied to all the exposed surfaces of the concrete as soon as possible after the concrete has set.

6.11 **TESTING AND ACCEPTANCE CRITERIA**

The contractor shall carry out all sampling and testing in accordance with the relevant Indian Standards at his own cost, in a laboratory approved by the Engineer-in-Charge.

6.11.1 **TESTING OF CONCRETE**

a) Normally, only compression tests shall be performed but the Engineer-in-Charge may require other tests to be performed in accordance with IS: 516 (Latest Edition).

b) The minimum frequency of sampling for each grade of concrete shall be as follows:

<table>
<thead>
<tr>
<th>Quantity of concrete in the work cu.m</th>
<th>Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5</td>
<td>1</td>
</tr>
<tr>
<td>6 – 15</td>
<td>2</td>
</tr>
<tr>
<td>16 – 30</td>
<td>3</td>
</tr>
<tr>
<td>31 – 50</td>
<td>4</td>
</tr>
<tr>
<td>51 &amp; above</td>
<td>4 plus one additional sample for each additional 50 cum or part thereof.</td>
</tr>
</tbody>
</table>

However at least one sample shall be taken from each shift.
At least 6 (six) specimens per sample shall be taken and 3 (three) of these shall be tested at 7 (seven) days and the remaining at 28 days. Minimum compressive strength on 15 cm cubes of different grades of concrete at 7 days shall be as per table 5 of IS: 456-1978.

a) To control the consistency of concrete from every mixing plant, slump test and or compaction factor test in accordance with IS: 1199 shall be carried out by the contractor every two hours or as directed for the test specimens and shall be recorded for reference. The Engineer-in-Charge may, at his discretion, may waive the above tests for small and unimportant concreting.

6.11.2 ACCEPTANCE CRITERIA FOR CONCRETE

a) The acceptance criteria for concrete shall be in accordance with IS: 456 (Latest Edition). However, in exceptional circumstances, the Engineer-in-Charge may, at his discretion, accept a concrete of lower strength than specified and which is otherwise unacceptable according to IS: 456 (Latest Edition).

b) Payment for concrete which is normally unacceptable as per the criteria laid down in IS: 456, but has been accepted by the Engineer-in-Charge shall be made at a reduced rate prorate to the strength obtained.

c) Concrete work found unsuitable for acceptance shall have to be dismantled and replacement is to be done as per specification by the contractor. No payment shall be made for the dismantled concrete, the relevant formwork and reinforcement, embedded fixtures, etc. wasted in the dismantled portion. If any damage is done to the embedded portion or adjacent structures, the same shall be made good, free of charge by the contractor, to the satisfaction of the Engineer-in-Charge.

6.11.3 LOAD TEST OF CONCRETE

Load test on concrete, if desired by the Engineer-in-Charge, shall be carried out as soon as possible after expiry of 28 days from the time of placing of concrete as per IS : 456. Entire cost of load testing shall be borne by the contractor and if, any portion of the structure is found unacceptable under the relevant clause of IS: 456, the same shall be dismantled and replaced by a new structure as per specification at no extra cost. If the adjacent structure gets damaged, the same shall be made good free of charge by the contractor to the satisfaction of the Engineer-in-Charge.

6.11.4 CONCRETING AT SUNKEN PORTION OF WC / TOILET / KITCHEN

Modified polyester fibre of approved make of 12 mm / 6 mm cut length is to be added in the concrete of sunken portion (sunken slab and vertical wall portion) @ 0.25% by weight of cement used i.e. 125 grams per 50 kg bag of cement.
7.0 FORMWORK

If it is so desired by the Engineer-in-Charge, the contractor shall prepare before commencement of the actual work, design and drawings for formwork and centering and get them approved by the Engineer-in-Charge. The formwork shall conform to the shape, line and dimensions as shown on the drawings.

Formwork shall be of laminated shuttering plywood of minimum 12 mm thickness as per BIS for columns and beams etc. and of laminated shuttering plywood of minimum 12 mm thickness as per BIS and or welded steel plates of uniform pattern for slabs. Struts shall generally be of mild steel tubes and strong sal ballis 150 mm or above in diameter. Bamboos, small diameter ballis, etc., shall not be used unless approved by the Engineer-in-Charge in specific cases.

Supports or props should not be put on any un-propped lower suspended floor or beam unless calculations are submitted to the Engineer-in-Charge to confirm the strength of the lower floor beam and no propping shall be taken out until the Engineer-in-Charge’s approval has been obtained.

The centering shall be true and rigid and thoroughly braced both horizontally and diagonally. The forms shall be sufficiently strong to carry without undue deformation, the dead weight load. Where the concrete is vibrated the form work shall be strong enough to withstand the effects of vibration without appreciable deflection, bulging, distortion or loosening of its components. The joints in the form work shall be sufficiently tight to prevent any leakage of mortar. The form work shall be such as to ensure a smooth uniform surface free from honeycombs, air bubbles, bulges, fins and other blemishes. Any blemish or defect found on the notice of the Engineer-in-Charge immediately and rectified free of charge as directed by him. To achieve the desired rigidity tie bolts, spacer blocks, the wires clamps as approved by the Engineer-in-Charge shall be used but they must in no way impair the strength of concrete or leaves stains or marks on the finished surface. Where there are chances of these fixtures being embedded, only mild steel or concrete of adequate strength shall be used. Bolts passing completely through liquid retaining walls/slabs for the purpose of security and aligning the form work should not be used.

For exposed interior and exterior concrete surface of beams, columns and walls, plywood or other approved forms thoroughly cleaned and tied together with approved corrosion-resistant device shall be used. All floor and beam centering shall be crowned not less than 8 mm in all direction for every 5.0 meters span. Unless described on the drawing or to the contrary beveled strips 25 mm by 25 mm shall be provided, without any extra charge, to form angles and in corners of column and beam boxes for chamfering of corners. Temporary openings for cleaning, inspection and for pouring concrete shall be provided where they are necessary and as may be directed by the Engineer-in-Charge. The temporary opening shall be so formed that they can be conveniently closed when required and must not leave any mark on the concrete.

7.1 CLEANING AND TREATMENT OF FORMS
All forms shall be thoroughly cleaned of old concrete, wood shaving, saw dust, dirt and dust sticking to them before they are fixed in position. All rubbish loose concrete, chippings, shavings, saw dust etc., shall be scrupulously removed from the interior of the forms before the concrete is poured as directed by the Engineer-in-Charge.

Before shuttering is placed in position, the form surface in contact with concrete shall be treated with approved non-staining oil or composition. Care shall be taken that the oil or composition does not come in contact with reinforcing steel or existing concrete surfaces. It shall not be allowed to accumulate at the bottom of the shuttering.

The form work shall be so designed and so erected that the forms for slabs and the sides of beams, columns and walls may be removed first, leaving the shuttering to the soffits of beams and their supports in position. Supporting of beams shall not be done except with the approval of the Engineer-in-Charge and props can be reinstated in anticipation of abnormal conditions. If form work for column is erected for the full height of the columns, one side shall be left open and built up in section as placing of concrete proceeds. Wedges, spacer bolts, clamps or other suitable means shall be provided to allow accurate adjustments of the form work and to allow it to be removed gradually without disturbing the concrete.

7.2 REMOVAL OF FORMS

The contractor shall begin the removal of form work only after approval of Engineer-in-Charge. He shall place on record the date on which the concrete is placed in different parts of the work and the date of the removal of form work there from. This record shall be checked and countersigned by the Engineer-in-Charge. The contractor shall be responsible for the safe removal of form work but the Engineer-in-Charge may delay the time of removal if he considers it necessary. Any work showing signs of damage through premature removal of form work or loading shall be entirely removal of form work or loading shall be entirely reconstructed without any extra cost to owner.

Forms for various types of structural components shall not be removed before the minimum periods specified in IS: 456 (latest edition) which shall also be subject to the approval of the Engineer-in-Charge.

However, in any case, form work shall not be struck until the concrete has reached a strength at least twice the stress to which the concrete may be subjected at the time of removal of forms.

The number of props left under, their sizes and disposition shall be such as to be able to safely carry the full dead load of the slab, beam or arch as the case may be together with any live load likely to accrue during or further construction.

Where the shape of the element is such that the form work has re-entrant angles, the form work shall be removed as soon as possible after the concrete has set to avoid shrinkage cracks occurring due to the restraint imposed.

The form work shall be so made as to produce a finished concrete, true to shape, lines, levels, plumb and dimensions as shown in drawings.
7.3 RE – USE OF FORMS

Before re – use all forms shall be thoroughly scrapped, cleaned, joints etc., examined and when necessary repaired and inside surface treated as specified herein before. Formwork shall not be used/ re-used if declared unfit or unserviceable by the Engineer-in-Charge.

8.0 FABRICATION AND PLACEMENT OF REINFORCEMENT STEEL

The contractor shall prepare and furnish to EPIL bar-bending schedule with working drawings for all R.C.C. works for review and approval by the Engineer-in-Charge. No work shall be commenced without the approval of the bar-bending schedule by the Engineer-in-Charge.

The contractor shall supply, fabricate and place the reinforcement steel to shapes and dimensions as per drawings and specifications.

Any adjustment of reinforcement to suit field conditions, construction joints other than those shown on drawings shall be subject to approval of the Engineer-in-Charge.

8.1 CLEANING

Before placing the concrete all steel for reinforcement shall be made free from loose scale, rust, oil, grease, paint or any other harmful matter which may effect its bond with concrete.

8.2 BENDING

Unless otherwise specified, reinforcing steel shall be bent in accordance with procedure specified in IS: 2520 and or as approved by the Engineer-in-Charge. Bends and shapes shall comply strictly with the dimensions given in the approved Bar Bending schedule. Bending schedule shall be rechecked by the contractor before bending and he shall be entirely responsible for its correctness.

No reinforcement steel shall be bent when in position in the work without approval of Engineer-in-Charge, whether or not it is partially embedded in concrete. Bars shall not be straightened in manner that will injure the material. Re-bending can only be done if approved by the Engineer-in-Charge. Reinforcement bars shall be bent by machine or other approved means producing a gradual and even motion.

8.3 PLACING IN POSITION

All reinforcement shall be accurately fixed and maintained in position as shown on the drawings by such approved means as steel chairs and or concrete spacer blocks. Bars intended to be in contact at crossing points shall be securely bound together at all such points by two number No. 20G annealed soft iron wire.

Binders shall tightly embrace the bars with which they are intended to be in contact and shall be securely held. The vertical distance between successive layers of bars shall be maintained by provision of steel spacer bars. They should be so spaced that the main bars do not sag perceptively between adjacent spacers.
The placing of reinforcement steel shall be completed well in advance of concrete pouring. Immediately before pouring, the reinforcement steel shall be checked by the Engineer-in-Charge for accuracy of placement and cleanliness and necessary corrections as directed by him shall be carried out. The concrete cover over the reinforcement shall be as shown on the approved drawings unless otherwise directed by the Engineer-in-Charge. Care should be taken to ensure that projecting ends of ties and other embedded metal do not encroach into the concrete cover. Where concrete blocks are used for ensuring the cover and positioning reinforcement, they shall be made of mortar 1:2 (one part cement: two parts sand) by volume and cured for at least 7 days. The sizes and locations of the concrete blocks shall be approved by the Engineer-in-Charge. Laps and anchorage lengths of reinforcing bars shall be in accordance with IS:456, unless otherwise specified. If the bars in a lap are not of the same diameter, the smaller will guide the lap length. The laps shall be staggered as far as practicable and as directed by the Engineer-in-Charge, and not more than 50% of bars shall be lapped at particular section.

9.0 **BRICK WORK**

9.1 **SCOPE**

This specification covers furnishing, installation, repairing, finishing, curing, protection, maintenance and handing over of masonry works for use in structures and at locations covered under the scope of the contract.

9.2 **GENERAL**

All masonry work shall be true to lines and levels as shown on drawings. All masonry shall be tightly built against structural members and mounded with dowels, inserts etc., as shown on drawings.

9.3 **MORTAR**

Mortar for brick work except for half brick or lower thickness walls shall generally be in 1 part cement and 5 parts sand by volume unless otherwise stated. Mortar for half brick and lower thickness brick walls shall be 1 part cement and 4 parts sand by volume unless stated otherwise.

The unit of measurement for cement shall be a bag of cement weighing 50 Kg. and this shall be taken as 0.035 cu.m. Other ingredients in specified proportions shall be measured in boxes of suitable size. Sand shall be measured on the basis of its dry volume. In case of damp sand, its quantity shall be increased suitably to allow for bulkage.

Cement and sand shall be mixed dry thoroughly on clean approved platform and water shall then be added to obtain a mortar of the consistency of a stiff paste, care being taken to add just sufficient water for the purpose. Mortar shall be used as early as possible after mixing and before it has begun to set and in any case within 30 minutes after water is added to dry mixture. Mortar unused for more than 30 minutes shall be rejected and removed from site of work.
9.4 **LAYING**

Brick shall be soaked by submergence in clean water for at least 6 hours in approved vats before use. The contractor shall provide tanks of sufficient capacity to allow the specified immersion. Bricks shall be laid in water by hand and not thrown. The bricks shall not be too wet at the time of use, as they are likely to slip on the mortar bed and there will be difficulty in ensuring plumbness of the wall. Bricks shall be laid in English bond unless specified otherwise. Broken bricks shall not be used. Cut bricks shall be used if necessary to complete bond or as closers. Bricks shall be laid with frogs upwards over full mortar beds. Bricks shall be pressed into mortar and tapped into final positions so as to be embed fully in mortar. Inside faces shall be buttered with mortar before the next brick is placed and pressed against it. Thus all joints between bricks shall be fully filled with mortar. Mortar joints shall be kept uniformly 10 mm thick. All joints on face shall be raked to minimum 10 mm depth using raking tool while the mortar is still green to provide bond for plaster or pointing. Where plaster or pointing is not provided, the joints shall be struck flush and finished immediately. Brickwork of two bricks thick or more shall have both faces in true plane. All brickwork shall be built tightly against columns, floor slabs or structural parts, around window and door frames with proper distance to permit caulked joint.

In half brick work 02 Nos. 6 mm dia MS bar to be provided in every 4th course.

9.5 **CURING OF MASONRY WORK**

Masonry shall be cured by keeping it wet for seven days from the date of laying. In dry weather at the end of days work top surface of masonry shall be kept wet by ponding.

10.0 **STONE WORK**

10.1 **STONE**

The stone shall be of granite, trap, limestone, sandstone, quartzite etc. and shall be obtained from quarries approved by Engineer-in-Charge. Stone shall be hard, sound, durable and free from weathering decay and defects like cavities, cracks, flaws, sand holes, injurious veins, patches of loose or soft materials and others similar defects that may adversely affect the strength and appearance. As far as possible stone shall be of uniform colour and texture. Generally stones shall not contain crysp crystalline silica or chart, mica and other deleterious materials like iron –oxide, organic impurities etc.

10.2 **SIZE OF STONE**

Normally stone used should be small enough to be lifted and placed by hand. Unless otherwise indicated the length of stone shall not exceed 3 times the height and the breadth or base shall not be greater than three-fourth of the thickness of the wall or not less than 15 cm. The height of stone may be upto 30 cm.

10.3 **LAYING**

All stone shall be wetted before use. Each stone shall be placed closed to the stone already laid so that the thickness of the mortar joints at the face is not more than 20 mm. Face stone shall be arranged suitably to stagger the vertical joints and long vertical joints shall be avoided.
10.4 **BOND STONE**
At least one bone stone or a set of bond stones shall be provided for every 0.5 sqm of area of wall surface. All the bond stones should be marked suitably with paint as directed by Engineer-in-Charge.

11.0 **PLASTER WORK**

11.1 **SCOPE**
This specification covers furnishing, installation, repairing, finishing, curing, testing, protection, maintenance till handing over, of plastering to masonry and concrete. Before commencing work on the finishing items the contractor shall obtain the approval of the Engineer-in-Charge regarding the scheduling of work to minimize damage by other contractors. He shall also undertake normal precautions to prevent damage or disfiguration to work of other contractors and other installations.

11.2 **PREPARATION OF SURFACE**
All joints in masonry walls be raked out to a depth of at least 10 mm with a hooked tool made for the purpose while the mortar is still green. Walls shall be brushed down with stiff wire brush, to remove all loose dust from the joints and thoroughly washed with water.

For all types of work the base cement concrete slab or masonry surface shall be roughened by chipping and cleaned of all dirt, grease or loose particles by hard brush and water. The surface shall be thoroughly moist to prevent absorption of water from the base course. Any excess of water shall be mopped up.

Prior to commencement of actual work, the approval of the Engineer-in-Charge shall be taken as to the acceptability of the base.

11.3 **MORTAR**
Mortar for plastering shall be as specified in the drawings and in the schedule of finishes. For sand cement plaster, sand and cement in the specified proportion shall be mixed dry on a water tight platform and minimum water added to achieve working consistency.

No mortar which has stood for more than half an hour shall be used, mortar that shows tendency to become dry before this time shall have water added to it.

11.4 **INTERNAL WALL PLASTER**
This plaster shall be laid in a single coat of 12 mm thickness with cement mortar 1:6 (1 cement : 6 fine sand). The mortar shall be dashed on the prepared surface with a trowel and finished smooth by trowel on the surface. Internal wall plaster shall be carried out on jambs, lintel and sill faces, top and undersides etc., as shown in the drawing or as directed by the Engineer-in-Charge.

11.5 **INTERNAL CEILING PLASTER**
Ceiling plaster shall be laid in a single coat of 6 mm thickness with cement mortar 1:3 (1 cement : 3 fine sand) applied before wall plaster.

11.6 EXTERNAL PLASTER

Exterior plaster shall be carried out in 2 layers, the first layer being 12 mm thick and the second layer being 6 mm thick. The first layer shall be dashed against the prepared surface with trowel to obtain an even surface. The second layer shall then be applied and finished leaving an even and uniform surface, trowel finished unless otherwise directed by the Engineer-in-Charge.

Modified polyester fibre of approved make of 6mm / 4.8 mm cut length is to be added with the cement mortar mix of the external plaster work @ 0.25% by weight of cement used i.e. 125 grams per 50 kg bag of cement.

11.7 APPLICATION OF PLASTER

Plaster when more than 12 mm thick, shall be applied in two coats, i.e., a base coat followed by the finishing coat. Thickness of the base coat, however, shall not exceed 12 mm in thickness. The lower coat shall be thicker than the upper coat. The overall thickness of the coat shall not be less than the minimum thickness shown on the drawings. The under coat shall be allowed to dry and shrink before applying the second coat of plaster. The under coat shall be scratched or roughened before it has fully hardened to form a mechanical key. The method of application shall be ‘thrown on’ rather than ‘applied to trowel’.

To ensure even thickness and true surface, patches of plaster about 100 mm to 150 mm square or wooden screed 75 mm wide and of the thickness of the plaster shall be fixed vertically about 2000 mm to 3000 mm apart to act as gauges. The finished wall surface shall be true to plumb, and the contractor shall, without any extra cost to the owner, make up irregularity in the brick work with plaster. All verticals edges of brick pillars, door jambs etc., shall be chamfered or rounded off as directed by the Engineer-in-Charge. All drips, grooves, moldings and cornices as shown on the drawing or instructed by the Engineer-in-Charge shall be done with special care to maintain true lines, levels and profiles. After the plastering work is complete, all debris shall be removed and the area left clean. Any plastering that is damaged shall be repaired and left in good condition at the completion of the job.

12.0 FINISH

Where ever any special treatment to the plastered surface is indicated, the work shall be done exactly as shown on the drawings, to the entire satisfaction of the Engineer-in-Charge regarding the texture, colour and finish.

12.1 STANDARD FINISH
Wherever punning is indicated, the interior plaster shall be finished rough. Otherwise the interior plaster shall generally be finished to a smooth surface. The exterior surface shall generally be finished with a wooden float.

12.2 **NEAT CEMENT FINISH**

Immediately after achieving a true plastered surface with the help of a wooden straight edge, the entire area shall be uniformly treated with a paste of neat cement at the rate of one Kg per sq.m. and rubbed smooth with a trowel.

12.3 **CURING**

Curing of plaster shall be started as soon as the applied plaster has hardened enough so as not to get damaged. The Engineer-in-Charge will give the decision as to when the plaster has hardened in. Curing shall be done by continuously applying water in a fine spray and shall be carried out at least 7 days. Each individual coat of plaster shall be kept damp continuously for a minimum two days.

12.4 **WATER PROOFING ADMIXTURES**

The contractor shall use approved water proofing admixtures made of approved manufacturer in the mortar for external plaster work. The quantity to be used etc., shall be in accordance with the manufacturer's instructions, however, subject to approval of the Engineer-in-Charge. These admixtures shall not contain calcium chloride unless specifically allowed by the Engineer-in-Charge and shall conform to IS : 2645.

12.5 **ACCEPTANCE CRITERIA**

Finish to masonry and concrete shall fully comply with the drawings, specifications, approved samples and instructions of the Engineer-in-Charge with respect to lines, levels, thickness, colour, texture, pattern and any other special criteria as mentioned in the specification or as shown on the drawing.

13.0 **FLOORING**

13.1 40 mm thick marble chips flooring rubbed and polished to granolithic finish, under layer 25 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) and top layer 15 mm thick with white, black, chocolate, grey, yellow or green marble chips of sizes from 1 mm to 4 mm nominal size laid in cement marble powder mix 3:1 (3 cement : 1 marble powder) by weight in proportion of 4:7 (4 cement marble power mix : 7 marble chips) by volume including cement slurry etc complete with medium shade pigment with ordinary cement.

13.2 **KOTA STONE FLOORING / SKIRTING**

a) **Material:** All the kota stone slab shall be of selected quality, hard, sound, dense and homogenous in texture free from cracks, decay, weathering and flaws. They shall be hand or machine cut to be requisite thickness. They shall be of the colour indicate in the drawing or as instructed by the Engineer-in-Charge.

The slab shall have the top (exposed) face polished before being bought to site, unless otherwise specified. The slab shall be conform to the size required. Before starting the work the successful bidder shall get the sample of slabs approved by Engineer-in-Charge.
b) **Laying:**

Mortar of specified mix shall be spread under the area of each slab, roughly to the average thickness specified in the items. The slab shall be washed clean before laying. It shall be laid on top, pressed, tapped with wooden mallet and brought to the level with the adjoining slabs. It shall be lifted and laid aside. The top surface of the mortar then shall be corrected by adding fresh mortar at hollows. The mortar is allowed to harden a bit and cement slurry of honey like consistency shall be spread over the same at the rate of 4.4Kg of cement per sqm. The edges of the slab already paved shall be buttered with grey cement, with admixture of pigment to match the shade of the slab including polishing and finishing complete.

13.3 **NON-SKID CERAMIC TILES**

Tiles shall be of 1st quality conforming to IS: 15622, of minimum size 300 mm x 300mm minimum 7 mm thick unless otherwise indicated in the schedule of finishes and drawing. The tile shall be laid over 20 mm thick cement mortar 1:4 over neat cement slurry @ 3kg per sqm over RCC slab including filling joints with neat white cement slurry mixed with pigment to match the color of tiles. The color and shade of the tiles shall be as directed by Engineer-in-Charge. The tile shall be of approved make.

13.4 **GLAZED TILES IN SKIRTING / DADO**

The tiles shall be 1st quality conforming to IS: 15622 of minimum thickness of 5 mm and of size as mentioned in the drawing / finishing schedule. The colour shall be got approved by Engineer-in-Charge of EPI. The tile shall be sound, true to shape, flat and free from flaws and other manufacturing defects affecting their utility. The tiles shall be laid over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and joining with grey cement slurry @ 3.3 kg / sqm including pointing in white cement mixed with pigment of matching shade.

14.0 **PROPERTIES, STORAGE AND HANDLING OF COMMON BUILDING MATERIALS**

14.1 **SCOPE**

The scope of this section is to specify the properties, storage and handling of common building materials unless otherwise mentioned in the drawings or schedule of items.
14.2 GENERAL

The whole of the materials to be mobilized in connection with the permanent work of the contact must be new and of good quality and description of their respective kinds and shall be approved by the Engineer-in-Charge.

Except where otherwise specified or permitted by the EPIL, all materials shall conform to the latest edition of the Bureau of Indian Standards. The initials ‘I.S./’BIS’ followed by a number in any of the contract document shall refer to the relevant Indian Standards and current at the date of tendering including all amendments published before that date.

Before ordering materials of any description, the bidders shall submit to the Engineer-in-Charge the names or suppliers proposed and shall obtain approval in writing from the Engineer-in-Charge of the supplier from whom he proposes to obtain such materials. Should the Engineer-in-Charge at any time be not satisfied with the methods of operations carried on at any supplier’s works or place of business, he shall have the power to cancel his previously given consent to obtaining any material from such suppliers.

15.0 WATER PROOFING TREATMENT ON ROOF SLAB

1. The water proofing treatment of roof slabs shall be as given below:

a) For flat roof prior to water proof treatment grading of slope 1:80 is to be provided with screed concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 12 mm nominal size) with minimum thickness of 25 mm near rain water drainage pipe.

b) **Inaccessible Roof**: Providing and laying APP (Atactic Polypropylene Polymer) modified pre fabricated five layer, 3-4 mm thick water proofing membrane black finished reinforced with polyester / glass fibre matt. The membrane to be laid over a coat of bitumen primer by using butane torch and finally painted with two coat of aluminum paint of approved make. The laying of the membrane to be done as per the specifications provided by the manufacturer.

   **Approved Manufacturers**: Bitumat Co. Ltd., Pidilite, General Membrane, Tamko, STP Ltd., Tixsa India Ltd.

c) **Accessible Roof**: Providing and laying APP (Atactic Polypropylene Polymer) five layer, 3-4 mm thick water proofing membrane black finished reinforced with polyester / glass fibre matt. The membrane to be laid over a coat of bitumen primer by using butane torch and finally overlaid with 40 mm thick concrete screed 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 12 mm nominal size). The laying of the membrane to be done as per the specifications provided by the manufacturer.

   **Approved Manufacturers**: Bitumat Co. Ltd., Pidilite, General Membrane, Tamko, STP Ltd., Tixsa India Ltd.

d) Water proofing treatment for roof slab shall be carried out by an approved specialized firm. Ten years guarantee shall be given by the specialized firm and the contractor on non-judicial stamp paper of Rs. 50.00 (Rupees fifty only) for the effectiveness of water proofing treatment.

16.0 WATER PROOFING TREATMENT ON SUNKEN PORTION
Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:

i) 1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound ‘Imperno’ of Snowcem or equivalent conforming to IS : 2645 in recommended portions.

ii) 2nd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion.

iii) 3rd course of applying blown or residual bitumen applied hot at 1.7 Kg. per sqm of area.

iv) 4th course of 400 micron thick PVC sheet. (Overlaps at joint of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 Kg/sqm.).

Water proofing treatment for sunken portion shall be carried out by a approved specialized firm. Ten years guarantee shall be given by the specialized firm and the contractor on non-judicial stamp paper of Rs. 50.00 (Rupees fifty only)

17.0 EXPANSION / ISOLATION / SEPARATION JOINTS

17.1 GENERAL

Expansion / Isolation / separation joints in concrete and masonry structure shall be provided at specified places, as per detail indicated in the drawings. The material and types of joints shall be as specified herein after. In case of liquid retaining structures, additional precautions shall be taken to prevent leakage of liquids as may be specified in the drawings or as directed by the Engineer-in-Charge. All materials are to be procured from reliable manufacturers and must have the approval of the Engineer-in-Charge. The Engineer-in-Charge may demand test certificates for the materials and or instruct the contractor to get them tested in an approved laboratory at no extra cost to the owner. Joints shall be formed true to line, level, shape, dimension and quality as per drawings and specifications. Prior approval of the method of forming the joints shall be obtained from the Engineer-in-Charge before starting the work.

17.2 BITUMEN BOARD / EXPANDED POLYSTRENE

17.2.1 BITUMEN BOARD

Bitumen impregnated fibre board of approved manufacturer as per IS : 1838 may be used as filler for expansion joints. It must be durable and waterproof. It shall be compressible and possess a high degree of rebound. The dimensions of the board shall be equal to that of the joints being formed. It shall, preferably be manufactured in one piece, matching the dimensions of the joints and not prepared by cutting to size smaller pieces from larger boards at site.

If required, commercial quality of expanded polystyrene products commonly used for commercial insulations may also be used as filler materials in expansion joints. The thickness may vary from 12 mm to 50 mm. The material shall have to be procured from
reliable manufacturers as approved by the Engineer-in-Charge. The method of installation shall be similar to that recommended by the manufacturers. A coat of Bitumen paint may have to be applied on the board against which concrete will be placed.

17.2.2 JOINT SEALING STRIPS

Joint sealing strips may be provided at the construction, expansion and isolation joints as a continuous diaphragm to contain the filler material and or to exclude passage of water or any other material into or out of structure. The sealing strips shall be either metallic like G.I. aluminum or copper, or non-metallic like rubber or PVC.

Sealing strips shall not have any longitudinal joint and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints.

The material is to be procured from reputed manufacturers having proven record of satisfactory supply of joints strips of similar make and shape for other jobs. The jointing procedure shall be as per the manufacturer's recommendations, revised if necessary by the Engineer-in-Charge. The contractor is to supply all labour and material for testing, protection etc.

17.2.3 METAL SEALING STRIPS

Metal sealing strips shall be either G.I., Aluminum or Copper and formed straight, U shaped, Z shaped or any other shape and of thickness as indicated in the drawings and schedule of finishes and or as instructed by the Engineer-in-Charge.

The transverse joints shall be welded using brass rods and approved fix and shall be tested by method approved by the Engineer-in-Charge to establish that it is leak proof. In case it is found that the joints can not be made leak proof, longer lap lengths and different method of brazing which will render it leak proof, shall be adopted by the contractor without any additional cost to the owner. The edges shall be neatly crimped and bent to ensure proper bond with the concrete.

17.2.4 G.I. STRIPS

G.I. Strips shall be minimum 18 gauge thick and 200 mm in width unless specified otherwise. The standards of galvanizing shall be as per relevant Indian Standard for heavy duty work.

The strips shall be strong, durable, without any rust or grease. At the joints the over – lapping shall be for a minimum length of 50 mm.
17.2.5 **ALUMINUM STRIPS**

Aluminum strips shall be minimum 18 swg thick 300 mm width unless specified otherwise and shall conform to IS: 737 of 19000 grade or 31000 grade (Designation as per IS: 6051). A minimum lap of 50 mm length, if required shall be provided at the joints.

17.2.6 **COPPER STRIPS**

The copper strips shall be minimum 18 swg in thickness and 300 wide unless specified otherwise and shall conform to relevant Indian Standards.

It shall be cleaned thoroughly before use to expose fresh surface, without any reduction in gauge. A minimum lap of 50 mm in length, if required, shall be provided at the joints.

18.0 **DAMP PROOF COURSE (DPC)**

It shall consists of a layer of cement concrete of proportions 1:2:4 (1 cement : 2 course sand : 4 grades stone aggregate of 12 mm nominal size) and of thickness 40 mm.

Cement concrete shall be, admixed with integral water proofing compound in specified proportion as per manufactures instructions. The proportions of water proofing compound shall not exceed 3% by weight of cement. Cement concrete laying shall be thoroughly compacted to dense impervious mass, be cured at least 7 days.

19.0 **PLINTH PROTECTION AND DRAIN**

It shall be provided around the building as per drawing.

20.0 **SYNTHETIC ENAMEL PAINT**

Shall be made from synthetic designs and drying oil with rutile titanium dioxide and other selected pigments to give a smooth, hard, durable and glossy finish to all exterior and interior surfaces. The paint shall conform to IS : 2932 and IS : 2933.

21.0 **WATER PROOF CEMENT PAINT**

Shall be made from good quality white cement and lime resistant colours with accelerators, waterproofing agents and fungicides. The paint shall conform to IS : 5410.

22.0 **ACRYLIC EMULSION PAINT**

Shall be water based acrylic copolymer emulsion with rutile titanium dioxide and other selected pigments and fungicide. It shall exhibit excellent adhesion to plaster and cement surface and shall resist deterioration by alkali salts. The paint film shall allow the moisture in wall to escape without peeling or blistering. The paint, after it is dried, should be able to withstand washing with mild soap and water without any deterioration in colour or without showing flaking, blistering or peeling.
23.0 OIL BOUND DISTEMPER

Oil bound distemper (IS: 428 -1969) of approved brand and manufacturer shall be used. The primer where used be cement primer or distemper primer. These shall be of same manufacturers as that of distemper. The distemper shall be diluted with prescribed thinner in a manner recommended by the manufacturer. Only sufficient quantity of distemper required for day’s work shall be prepared.

24.0 WHITE WASHING

Shall be done from pure shell lime or fat lime, or a mixture of both as instructed by the Engineer-in-Charge, and shall conform to IS: 712 latest edition. Samples of lime shall be submitted to the Engineer-in-Charge for approval and lime as per approved sample shall be brought to site in unslaked condition. After slaking it shall be allowed to remain in a tank of water for two days and then stirred up with a pole until it attains the consistency of thin cream. 100 grams of gum to 6 litres of white wash water and little quantity of indigo of synthetic ultramarine blue shall be added to the lime.

25.0 DOOR, WINDOW AND VENTILATOR

25.1 STEEL DOOR, WINDOW & VENTILATOR

Steel door frames shall be manufactured form commercial mild steel sheet of 1.25 mm thickness conformig to IS: 266 and IS: 435. Hot rolled steel section for fabrication of steel window and ventilator shall conforms to IS: 7452. Shapes, weight and designation of hot rolled sections shall be as per IS: 7452. The workshop for fabrication shall be got approved by Engineer-in-Charge.

Fabrication drawings shall be submitted by the contractor which shall also include the weights of materials used and got approved from the Engineer-in-Charge.

25.2 GLAZED ALUMINUM DOOR, WINDOWS, FRAMES

Work to be executed as per IS – 1948. All sections shall be approved by Engineer-in-Charge before fabrication is taken up. Doors, Windows, Frames, Mullions, Transoms etc. shall be anodized in bath of sulfuric acid to provide a clear coating of minimum 15 micron (IS: 1968). The anodized materials shall then be sealed by immersing in boiling water for 15 minutes. A protective transparent coating shall be applied to the sections before dispatch from the factory.

Fabrication drawings shall be submitted by the contractor which shall be include the weights of materials used and got approved from the Engineer-in-Charge.

26.0 GLASS AND GLAZING

SCOPE

The work in general shall consists of supplying and fixing all glass and glazing including all chips, putty, mastic cement etc. wherever required as shown on drawings.

INSTALLATION
The contractor shall supply and install all glass and glazing as required for various doors, windows, sashes, ventilators and fixed louvers, miscellaneous glazing having uniform refractive index and free from flaws, specks and bubbles. The glass be brought to site in the original packing from the manufacturer and cut to size at site. The cut edges shall be straight free from chips, spalls or any other damages. Clear glass shall be flat drawn sheet glass and shall be at least 4 mm thick. Sheet glass for doors shall be minimum 6.3 mm thick.

Wired glass shall be thick rolled glass with centrally embedded 24 g. wire mesh of Georgian type. This may be of clear or coloured glass, as shown in drawings.

Quick setting putty shall be used for windows and sashes except when glare reducing glass is used where it shall be of non-setting type of approved make conforming to IS : 419.

Neoprene gaskets with snap-fit glazing shall be fixed as per manufacture's instructions and shall fit firmly against the glass to give a leak-proof installation.

27.0 CARPENTRY AND JOINERY

27.1 SCOPE

This shall include supply and fixing of door and window shutters, paneled and flush doors, partitions, wall paneling, shelves, furniture, cabinets, pelmets etc., as shown in drawings including a prime coat of approved paint, varnish/synthetic enamel paint or fixing of plastic laminate where called for in the schedule. This shall also include supply and fixing of all hardware and fittings shown in the drawings.

27.2 TIMBER

Unless otherwise specified all timber shall be best quality well seasoned second class hard wood free from larger loose knots, cracks, and other defects. Where specified timber shall be treated with approved wood preservative. Before starting the carpentry work, the contractor shall have the wood approved by the Engineer-in-Charge.

27.3 PLYWOOD

Plywood shall be commercial quality or with decorative surface veneer. Unless otherwise stated, the adhesive used in plywood shall be phenol formaldehyde resin of B.W.R. grade conforming to IS: 848.

27.4 FLUSH DOORS

Flush doors shall be block or solid core doors with commercial or decorative faces and hardwood edges. The core for solid core doors shall be of block board or wood particle board. The thickness shall be as specified in the ‘Schedule finishes’.

Flush doors and board shall be of the required size and thickness. Flush doors shall be ordered to a size little more in which to that after trimming, it fits the opening between...
rebates perfectly. Where shown in the drawings and the schedule, flush doors shall be surfaced with decorative laminates of required type and design. The laminate shall be glued to the panel with liquid synthetic phenol formaldehyde resin glue and kept in suitably pressed for at least 12 hours as per best trade practice.

27.5 **PANELED AND GLAZED DOORS AND WINDOW SHUTTERS**

The wood shall be accurately cut, planed and smoothened to hold full dimensions as shown in the drawings after finishing. The thickness of stiles and rails shall be as required for the shutters.

Stiles and rails shall be properly and accurately mortised and tongued. While assembling a leaf, stiles shall be left projecting as a horn. The stiles and rails shall have 12 mm groove or as specified in the drawings for the panel or glass to fit in.

27.6 **FLY PROOF SHUTTER**

The wood shall be accurately cut, planed and smoothened to hold full dimensions as shown in the drawings after finishing. The thickness of stiles and rails shall be as required for the shutters. Patching or plugging of any kind shall not be permitted except as provided. The stiles and rails shall be given a rebate to receive the wire gauge which shall from the panels.

24 gauge MS, wire Gauze conforming to IS: 1568 shall be used for fly proof shutter.

27.7 **CABINET WORK**

All cabinet work shall be a prime cost item. Cabinets shall be prepared at site as per best practices and techniques, machines, tools and craftsmen available in the furniture making industry. Sample of the work shall be approved by the Engineer-in-Charge.

Details shall be incorporated as shown in the drawings. Bottom shall be framed in to the drawer front, sides and back. Accurately aligned guides and proper clearance smoothly without bending. All joints and all work shall be glued together with phenol formaldehyde synthetic glue resin, the parts being clamped and pressed at least for 12 hours.

28.0 **FITTINGS AND FIXTURES**

Fixtures and fittings for doors, windows etc., shall be as shown on drawing and finishing schedule. These shall be heavy type, good quality and from approved manufacturer.

28.1 **WORKMANSHIP**

28.1.1 **GENERAL**

The work shall be done by skilled carpenters as per details shown on drawing or instructed by the Engineer-in-Charge. Farming timber and other work shall be close fitting with proper wood joinery, accurately set to required lines or levels and rigidly secured in place.
The surface of frames etc., which will come in contact with masonry after fixing, shall be given two coats of approved paint before fixing. Mastic caulking shall be done after fixing external door and window frames. Special care shall be taken to match the grain of timber or plywood which will be subsequently polished. Screwing or nailing will not be permitted to the edge of plywood or chip board sheets. All exposed plywood edges shall be finished with teakwood lipping unless otherwise shown on drawings.

28.1.2 FINISH

All carpentry work after finishing shall be sand papered smooth. A prime coat of paint shall be given after inspection by the Engineer-in-Charge to all surfaces other than those which shall be subsequently polished or covered with laminated plastic sheet.

29.0 The successful bidder shall establish a field testing laboratory at site, equipped with the minimum following equipments.

1. One no. compression testing machine of 100 tonne capacity suitable for testing concrete cube of 150 mm x 150 mm x 150 mm size.

2. One no. electronic weighing machine with maximum weight of 10 kg.

3. 24 nos. MS cube moulds of size 150 mm x 150 mm x 150 mm.

4. One no. slump cone.

5. One set of sieves for fine aggregate. (includes sieves of designation 4.75 mm, 2.36 mm, 1.18 mm, 600 microns, 300 microns, 150 microns).

6. One set of sieves for coarse aggregate. (includes sieves of designation 37.5 mm, 19 mm, 9.5 mm, 4.75 mm).

7. One no. silt testing jar.

8. One no. electric oven.

9. One no. vernier calliper.

10. One no. screw gauge.

30.0 LIST OF APPROVED MAKES

| Sl. No. | Material                          | Manufacturer |
1. **Synthetic Enamel Paint**: Berger, Asian, ICI, Dulux, Nerolac, Shalimar, J&N

2. **Plastic Emulsion Paint**: ICI, Asian, Berger, Nerolac

3. **Other Paints / Primer**: ICI, Asian, Berger, Nerolac

4. **Ceramic Tile**: Johnson / Somany / Kajaria/ Regency/Orient

5. **Glazed Tile**: Johnson / Somany / Kajaria / Regency/Orient

6. **Lift**: OTIS/ Kone/Mitsubishi/Johnson/Schindler

7. **Ordinary Portland Cement**: ACC, Ultratech, Star, Lafarge, Dalmia, Ambuja, Amrit conforming to IS for 43 / 53 grade as applicable of design and drawing.

8. **Pre-laminated (phenol bonded) Particle Board**: Novapan, Bhutanboard, Kitply, Greenlam, Fidayen

9. **Water Proofing Compound**: Accoproof, Impermo, CICO, Pidilite, Choskey, Sika Qualcrete, BASF

10. **APP (atactic Polypropylene Polymer) Membrane**: Pidilite Industries Ltd. Texsa India Ltd., STP Ltd., Bitumat Co. Ltd. Soprema, General Membrane

11. **Door Closer / Floor Spring**: Door King, Everite, Hardwyn

12. **Aluminium Section**: Indal, Hindalco, Bhoruka

13. **Clear Glass / Clear Float Glass / Toughened Glass**: Modi, Atul, Saint Gobain

14. **Sunken Portion Treatment**: Choskey, Rofee, CICO, SIKA,BASF

15. **White Cement**: JK, Birla White

16. **Texture Paint**: Berger, Spectrum or equivalent

17. **White Glazed Fireclay Sinks**: EID, Parry

18. **Reinforcement Steel MS & TMT**: M.S. bar shall conform to IS: 2062. TMT bar shall be as per IS: 1786 of grade Fe-415 / 500. Approved manufacturer for MS/TMT bar are SAIL/ TATA TISCON/ RINL/ SHYAM STEEL other reputed manufacturer with prior approval of the competent authority.

19. **Block Boards / Particle board / Ply Board**: Century / Green Ply / Kitply/Fidayen

20. **Precast Mosaic & Precfast**: Modern / Nitco
Chequered Tiles

21. OBD / Dry Distemper : Shalimar / Asian / Dulux / Nerolac / Berger

22. Waterproof Cement Paint : Super Snowcem / Duracem / Aquacem / Acocem

**Note:** The materials other than approved list shall also bear IS mark and/or to be approved by the Engineer-in-charge before the use. Required tests are to be conducted by the contractor before use at works.

### 31.0 I.S. CODE

Some of the important relevant applicable IS codes are mentioned below:

- **IS: 1200** (Pertaining to respective work): Method of measurement of building and Civil Engineering works.
- **IS: 456** Code of practice for plain and reinforced concrete.
- **IS: 1199** Method of sampling and analysis of concrete.
- **IS: 1838** Preformed fillers for expansion joints in concrete non extruding and resilient type (Bitumen impregnate filler)
- **IS: 2386** (Part I to IV) Methods of tests for aggregates for concrete.
- **IS: 2505** General requirements for concrete vibrators, immersion type.
- **IS: 2506** Screed board concrete vibrators.
- **IS: 2514** Concrete vibrating tables.
- **IS: 3025** Code of practice for concrete structure for the storage of liquids.
- **IS: 3350** Methods of tests for routine control for water used in industry.
- **IS: 4565** From vibrators for concrete.
- **IS: 9130** Admixture for concrete.
- **IS: 516** Method of tests for strength of concrete.
- **IS: 1786** High strength deformed bars for concrete reinforcement.
- **IS: 1081** Code of practice for fixing and glazing of metal doors, windows and ventilators.
- **IS: 2502** Code of practice of bending and fixing bars for concrete reinforcement.
- **IS: 2571** Code of practice for welding and mild steel bars used for reinforced concrete construction.
IS: 2202  Specification for wooden flush door shutter.
IS: 1661  Code of practice for cement and cement lime plaster finish on walls and ceilings.
IS: 4101  Code of practice for external facing and veneers.
IS: 6248  Metal rolling shutter and rolling grills.
IS: 1081  Code of practice for fixing and glazing metal doors, windows and ventilators.
IS: 1038  Specifications for steel doors, windows and ventilators.
SPECIFICATIONS OF ELECTRICAL WORKS

1.0 GENERAL

1.1 The Electrical installation work shall be carried out in accordance with Indian Standard code of practice for Electrical Wiring Installation IS: 732 – 1963 and IS: 2274 – 1963. It shall also be in conformity with the current Indian Electricity rules and regulations and requirements of the Local Electric Supply Authority and fire insurance regulations in so far as these become applicable to the installation. Electrical work in general shall be carried out as per following specifications.

General Specifications of Electrical Works

(Part I – Internal) – 1994

General Specifications of Electrical Works

(Part II – External) – 1994

Whenever these specifications calls for a higher standard of materials and on workmanship than those required by any of the above mentioned regulation and specifications, then the specification mentioned here under shall take precedence over the said regulations and standards.

2.0 MATERIALS

All materials to be used in this work shall be new and shall be approved by Engineer-in-Charge.

List of approved makes and manufacture of electrical materials is attached herewith. Only such materials as are on the list shall be allowed to be used.

3.0 RECEPTACLES

All 250V receptacles shall be 2 wire three pole 5 amp. flush mounted or flush type of approved make. For power loads, the flush type switches and socket shall of 15 amp. rating and be also of approved make.

4.0 SWITCHES

All flush type switches shall be totally enclosed type of 5 amp. rating for upto four light outlets and 15 amp rating for more than four light outlets, being controlled by one switch. These shall be of approved make for light loads. For power loads, the flush type switches shall be of 15 amp rating and be of approved make.

5.0 COVER PLATE

These shall be the integral part of the switch and socket and of a colour approved by the Engineers as required.
6.0 POSITION OF LIGHTING & DISTRIBUTION BOARDS AND SWITCH GEARS

The recommended position of the lighting control switches, distribution boards and switch gears, as shown on the layout drawings, will be adhered as far as practicable.

Should there be any discrepancy or incomplete description, ambiguity or omission in the drawings and other documents, whether original or supplementary, forming the contract, the contractor shall immediately on discovering the same, draw attention of the Engineer.

Prior to the installation of lighting, fan and plug points and the distribution boards switches etc. final position shall be ascertained by the contractors with the Engineer-in-Charge’s representative.

7.0 PAINTING AND MARKING

All exposed steel work not actually embedded in building construction (viz. junction boxed, switch boards etc) will be painted to match the existing shades of walls as instructed.

8.0 SUPPLY

The 415 KV supply mains will be brought in at place/s pointed out by the Engineer and will be three phase 4 wire, 50 cycles system 415V between phases. All necessary arrangements, to obtain the required supply connections shall be made by the contractors.

9.0 CONCEALED WIRING INSTALLATIONS

9.1 CONDUITS

These shall be of 16 SWG upto 32 mm dia and 14 SWG for 38 mm and above dia, PVC having perfectly circular tubing and capable of being cleaned and tight fitting joints.

9.2 ERECTION

Conduits shall be laid before casting in the upper portion of a slab or otherwise, as may be instructed or in accordance with approved drawing so as to conceal the entire run of conduits and ceiling outlet boxes. Vertical drops shall be buried on columns or walls. Wherever necessary, chases will be cut by the contractor with the prior written orders of the site Engineer-in-Charge to sufficient depth to allow fill thickness of plaster over conduits. Width of the chases will be made to accommodate the required no. of conduits. The chases will be filled with cement, coarse sand mortar (1:3) and properly cured by watering. If a chase is cut in an already finished surface the contractor shall fill the chase and finish is to match the existing finish. Contractor should not cut any iron bars to fix conduits. When the conduit is to be embedded in a concrete member, it shall be adequately tied to reinforcement to prevent displacement during casting.

Suitable expansion joint fittings of approved make shall be provided at all points where the conduit crosses any expansion joint in the building.
9.3 **USE OF BENDS**

This shall be of 14 SWG. As far as possible, the conduit system shall be so laid out that it will obviate the use of tees, elbows and sharp bends. No length of conduit shall have more than the equivalent of two quarter bends from inlet to outlet.

9.4 **CROSS SECTION**

The conduits shall be of ample sectional area to facilitate the drawing of cables. In no case shall the total cross section of cables measured over all, be more than half the area of the conduit.

9.5 **CEILING OUTLET BOXES**

Outlet boxes for ceiling fan shall be fabricated for a minimum 3 mm thick, 200 mm depth and 60 mm sides with 12 mm dia rod welded to the box. These shall be so protected at the time of laying that no material finds its way inside during concrete casting or plastering.

9.6 **DRAW BOXES**

MS draw boxes of ample dimension shall be provided at convenient points on walls to facilitate pulling of long run of cables. They will be completely concealed with asbestos cement covers flush with plaster wall. These boxes will be as few as possible and located where found suitably by the Engineer-in-charge. All the MS boxes used for house switches, plugs, drawing of wires etc., shall be five sided and of minimum 20 SWG.

9.7 **SWITCH BOXES**

MS boxes of required sizes shall be provided to house speed regulators, switches and plug sockets. This shall be attached to conduits by means of check nuts on either side of their walls. These shall be completely concealed leaving edges flush with wall surfaces. MS box shall be fitted with a brush earth terminal.

9.8 **CLEANING OF CONDUIT RUNS**

The entire conduit system including outlets and boxes shall be thoroughly cleaned after completion of erection and before drawing in cables.

9.9 **PROTECTION**

To safe guard against filling up with the plaster etc., all the outlets boxes and switch boxes will have to be provided with temporary covers and plugs within the tendered cost which shall be replaced by sheet covers as required.

9.10 **PAINTING**

Before erection, the conduit shall be painted at such places where the pipe had been damaged due to vice and wrange grip.
9.11 **FAN REGULATOR**

These shall be flush type, located in the same box as light switches wherever possible. The regulators shall be tested before installation to ensure proper graduation of fan speed.

9.12 **LAYING OF CONDUIT ONLY FOR TELEPHONE OR OTHER DUMMY CONDUITS**

The conduit for telephone system shall be the same as conduits for other work and as specified before. The minimum size shall be 20 mm dia. Junction boxes shall be provided at distance not exceeding 10 M. The whole work shall be done in cooperation with the Telephone Authority and the contractor must make such modifications as the company desires in consultation with Telephone Department. The same will apply to any other dummy conduit.

9.13 **WALL SOCKETS AND PLUGS**

Wall sockets will be of the following type:

a) For lighting plug point - 5 / 6 Amps. Capacity, 3 / 5 pin type.
b) For power plug point - 15 / 16 Amps. Capacity, 5 / 6 pin type.

The quoted rates shall also include earthing the third pin with 16 SWG GI wire.

9.14 **WIRES AND CABLES**

a) All wires shall have been manufactured in accordance with latest IS specification amended upto date. Wire shall be carried out with PVC insulated 660 / 1100 volt grade unsheathed single core with electrolytic studded copper conductor.

b) Twin flexible cables used for pendants shall have cross sectional area of 0.001 sq. inch (equivalent to 23/0.0076 inch) or large and be insulated in accordance with relevant IS specification amended upto date.

9.15 **POINT Wiring**

a) The point wiring shall be carried out in the under mentioned manner each of which will conform to the given specification:

1. In concealed conduit system including providing supply and fixing of conduit, bends, junction boxes, brass bushes, check nuts etc.

2. Looping system will be followed throughout including supply and drawing of required sizes of wire without damaging the same.

3. All flush type accessories will be used.

4. The point will commence from the distribution board including circuits each having independent neutral wire and will end upto the outlet box and switch box.
5. The point will be complete with conduit including accessories and wire, necessary junction outlet and switch boxes, connections and ceiling roses, switch boxes and flush plates, necessary earthing connection etc., as required.

6. The installation will generally be carried out in conformity with the ISI code, electrical rules and the Electrical Rules and Institution of Engineers (London) briefly called IEE Rules, where the specification differs these specifications will prevail.

For the purpose of determining the load per circuit, the following rating of points shall be assumed:

- Light point 80 watts.
- Convenience plug points 100 watts.
- Fan points 80 watts.
- Exhaust fan point 12" 80 watts.
- Exhaust fan point 15" 90 watts.
- Exhaust fan point 18" 120 watts.
- Power plug points 1000 watts.

The convenience plug point shall be complete with 3 / 5 pin 5 / 6 Amps. Plug and socket enclosed in MS box with the controlling switch as required and the third pin shall be earthed with no. 16 SWG bare copper wire.

The ceiling fan point shall be complete with ceiling outlet box with recessed fan hook and a provision in the switch box for mounting the regulators. The ceiling fan/exhaust fan and its regulator shall be earthed. The point shall be complete as above.

Each circuit shall have not more than one power plug and the plugs shall be earthed with no. 14 SWG bare GI wire. The point shall be completed with a 5 / 6 pin 15 / 16 Amps plug socket switch combined mounted on a MS box.

9.16 MAINS AND SUB-MAINS

Mains and sub-mains shall consists of wires, cables and conduits bends junction boxes, PVC bushes, check nuts etc., as specified herein before. The sizes and capacities of conduits and wires shall be required as per load and shall commence from main switches to various distribution boards. Wires shall be drawn in the concealed without being damaged. For this purpose, draw boxes shall be located at convenient place. Every main and sub-main will run in an independent conduit with an independent earth wire of suitable capacity running along the entire run of conduit. For single phase, one earth wire shall run and for 3 phase, 2 earth wire shall run. Necessary provision of wire lengths entering and emerging out of conduit must be made for connections.

9.17 COMPLETION TEST
The installation with fittings complete shall satisfactorily pass the following tests before current is switched on:

a) All lamps and appliances having been connected and with all switches ‘ON’ a pressure not less than twice the working pressure (subject to a limit for 500V) shall be applied and the insulation resistance must not be less than 50 meg. Ohms divided by the number of points.

b) With all lamps and appliances removed from the circuit and all switches ‘ON’ a similar test between poles shall satisfy the above requirement.

c) As soon as the conduit in slab/screed is fixed, the contractor shall arrange to give it earth continuity test to ensure that the conduit or lead sheathing is electrically continuous throughout and connected to earth.

d) To ensure that all single pole switches are on the live side of the apparatus they control.

The contractor shall notify in writing to the Engineer about the completion of the work. The contractor will fix up the date of testing in consultation with the Engineer-in-Charge for such tests.

Should the above tests not comply with the limits as laid down in IEE Rules, the contractor shall rectify the faults at his own cost until the required results are obtained.

9.18 DISTRIBUTION BOARDS / SUB DISTRIBUTION BOARDS

All the distribution boards shall be factory manufactured of approved brands only. These shall be complete with necessary supporting structures, copper bus bars, neutral link and removable cover. The miniature circuit breaker shall be with notified operating curves and be capable of clearing a fault of 5 KA. The miniature circuit breaker to be used to control lighting circuits shall have tripping characteristics of 5.0 sec. At 150% full load current and those for power point circuits of 0.01 seconds at 700% full load current. The miniature circuit breakers shall be rated for the ambient temperature prevailing at site and shall have the trip devices correctly calibrated. All these MCB’s shall be factory tested and supported by suitable test certificates.

10.0 UNDER GROUND CABLE

10.1 MEDIUM AND LOW VOLTAGE

Cables should be doubled steel tape armoured PVC insulated conforming to quality as specified in the schedule of work. All joints of cables should be in joint boxes and filling in of the compound shall be done as per IS specification using the best quality materials. All cables, accessories and other materials should conform to IS specification. The jointing work should be carried out by a competent authorized cable jointer.

10.2 H.T. CABLES

All cables used for 11/33 KV system shall be XLPE cables. These cables shall have individually screened course and be manufactured and tested according to IS:7098 (Part – II) – 1973 amended upto date. The conductor for these cables shall be from electrical
purity aluminum ¾ H or H temper. All conductors shall be compacted circular in shape. The insulation shall be high quality cross linked polyethylene – obtained by chemical cross linking of polythene molecules. The armouring applied over the common covering shall be of flat steel wires.

Each and every delivery length of the cable shall be subjected to routine test as per IS:7098 (Part – II) – 1973 amended upto date. The operating characteristics of these cables shall be as under:

i) Permissible maximum continuous operating temperature - 90°C
ii) Permissible short circuit temperature - 250°C
iii) Dielectric constant (Er) st 50 Hz 30°C to 90°C - 2.4
iv) Loss factor at 50 Hz, 30°C to 90°C - 0.05×100×-314
v) Special voltage resistivity at 20°C - >10ohm cm

10.3 TRENCH

Trenches shall not be less than 35 cm wide and 75 cm below ground level for cables upto 1.1 KV and 35 cm wide and 120 cm deep for cables above 1.1 KV grade. Wherever necessary, suitable propping and shoring made on to avoid caving of the adjoining trench walls. Where the cables cross other service lines adequate protection should be taken to prevent accidental exposure and or damage to the cables.

10.4 SPACING BETWEEN CABLES

Before the cables are laid, a layer of 8 cm sand is provided for purpose cushioning. The cables after being uncoiled and laid into the trench from the rollers should be drawn in straight lengths. After the cable is laid, it is to be covered with another layer of sand of about 15 cm in depth, and the top surface to be suitably leveled to receive the cable covers. These covers shall be of concrete blocks of 20 cm × 20 cm × 5 cm and laid in a manner to overlap the cables of either side by at least 5 cm. Cable markers of aluminum or GI shall be provided at ground level after being suitably embedded in concrete blocks of 20 cm × 20 cm × 20 cm and spaced at distance of about 30 m from center to center at every change in direction.

Cables may also be laid in tire formation in the same trench. In this case also after the first 8 cm sand cushion, the first tire of cable is laid and sand filled in the trench to form a bed of 23 cm. above this tier. After this the second cable is laid and process repeated the top most tier being at least 45 cm. below the ground level. The cable shall be suitably covered with breaks or tiles.

When laying the cables care should be taken to see that the PVC insulated cables are bend or straightened slowly and sharp radii. The minimum safe bending radius for single core cables is 20 dia and for multi-core cables 15 diameters and for armoured cables 12 diameters, the diameter being the overall diameter of the cable. Where the cables are required to cross roads this should be normally taken through hume pipe at least 15 cm in diameter.
Cables laid inside the building should be properly protected and be carried either through ducts with suitable covers with slab or chequered plates or fixed to walls by clamps, brackets or cables trays.

Cable entering or leaving the buildings should be taken through GI pipes. These pipes/sleeves shall be properly sealed after pulling the cables for preventing the water from entering inside the building as per directions of Engineer-in-Charge.

10.5 LAYING OF CABLE TRAY / SURFACE

Cable shall be laid in perforated MS cable tray / ladder. Cable shall be properly dressed before cable ties / clamps are fixed.

10.6 CABLE TAGS

Cable tags shall be made out of 2 mm aluminum sheets, each tag (1 – ½) inch dia with one hole of 2.5 mm dia, 6 mm below the periphery. Cable designations are to be punched with letter / number and the tags are to be tied inside the panels beyond the glands as well as below the glands at cable entries. Tray tags are to be tied at all bends. One straight length, tags shall be provided at every 5 meters.

10.7 TESTING THE CABLES

High voltage test should be undertaken to ensure that no damage has occurred during the laying operation and that the joints are in order. Cables of 1.1 KV suitable for low and medium voltage should withstand for 15 minutes, 3000 D.C. volts applied between the conductors and between each conductor and sheath. In absence of pressure testing arrangement it is sufficient to test for 1 minute with 2000 volts. If the test results are found to be not satisfactory the contractor shall arrange for having this set right at their cost, including removal of rejected materials, re-laying, etc.

10.8 EARTHING

Plate Electrode: shall be made of as plats of 6 mm thick and (600 x 600) mm size GI electrode. The plate shall be buried vertically in ground at depth of not less than 3.5 meters to the top of plate, the plate being en-cashed in charcoal and salt to a thickness of 15 cm all round. It is preferable to bury the electrode to a depth where the sub-soil water is present. Earth leads to electrode shall be laid in a GI pipe and connected to the plate electrode with GI bolts, nuts and washers. A GI pipe of not less than 19 mm dia shall be placed vertically over the plate and terminated in a funnel at 5 cm above ground. The tunnel shall be provided with a wire-mesh. The funnel shall be enclosed in a masonry chamber (100 x 50) cm. The chamber shall be provided with CI frame cover of (100 x 50) cm size. The earth station shall also be provided with a suitable permanent identification level tag.

Pipe Electrode: shall comprise of a 2.5 meter long 40 mm dia GI pipe buried in a plot of (35 x 35) cm size and filled with alternate layer of charcoal, salt and river sand and connected at the top to a GI pipe of 19 mm, 1 meter long with a funnel at the other end, 5 cm above the ground. The earth lead shall be properly fixed to the pipe electrode with
brass bolt, nuts and washers. The funnel and earth lead connection shall be enclosed in a masonry chamber (30 x 30 x 30) cm dimension. The chamber shall be provided with a CI frame with cover. Proper permanent identification tag / level shall be provided for each electrode.

Normally each electrode shall not be situated less than 1.5 m from any building.

**Testing:** on completion of the entire installation, the following test shall be conducted and no earth electrode shall have ohmic resistance of more than 2 ohm and in rocky soil not more than 3 ohm.

**11.0** The work shall basically consist the following:

<table>
<thead>
<tr>
<th>SL. NO.</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>POINT WIRING</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Wiring for light point/fan point/exhaust fan point/ call bell point with 1.5 sq.mm PVC insulated copper conductor cable in recessed PVC conduit as required including 5/6 amp piano type switch, C.I. cover plate etc. complete.</td>
</tr>
<tr>
<td>2.</td>
<td>Wiring for twin control light 1.5 sq.mm PVC insulated, copper conductor, cable in recessed PVC conduit with 2 way, 5/6 amp piano type switch etc. as required.</td>
</tr>
<tr>
<td>3.</td>
<td>Wiring for 3 pin 5/6 amps light plug point on same switch board including providing and fixing 3 pin 5/6 amp socket outlet and 5/6 amp piano type switch connection etc. as required.</td>
</tr>
<tr>
<td>4.</td>
<td>Wiring for light plug 2 × 1.5 sq.mm PVC insulated copper conductor single core cable in recessed PVC conduit along with 1 no. 2.24 mm dia bare copper wire for loop earthing as required.</td>
</tr>
<tr>
<td>5.</td>
<td>Wiring for power plug with 2 × 4 sq.mm PVC insulated copper conductor, single core cables in recessed PVC conduit along 1 no. 2.24 mm dia bare copper wire for loop earthing as required.</td>
</tr>
<tr>
<td>6.</td>
<td>Wiring for Ckt. Wiring with 2 × 2.5 sq.mm PVC insulated, copper conductors, single core cables in recessed PVC conduit complete as required.</td>
</tr>
<tr>
<td>7.</td>
<td>Wiring for sub main with 4 × 6 sq.mm PVC insulated copper conductor single core cables in recessed PVC conduit complete as required.</td>
</tr>
<tr>
<td>8.</td>
<td>Supplying and fixing metal box of 100 mm × 100 mm × 60 mm deep (nominal size) in recess with suitable size phenolic laminated sheet cover in the front including providing and fixing 3 pin 5/6 amps socket outlet and 5/6 amps tumbler/piano type switch, connections, painting etc. as required (for light plugs).</td>
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<tr>
<td>9.</td>
<td>Supplying and fixing metal box of 180 mm × 100 mm × 60 mm deep (nominal size) on surface or in recess with suitable size phenolitic laminated sheet cover in the front including providing and fixing 3 pin 15/16 amps tumbler/piano type switch, connections, painting etc. as required (for power points).</td>
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<tr>
<td>10.</td>
<td>Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps G-series, SP, MCB, in sheet steel enclosure in recess with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc.</td>
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</table>
as required.

**SWITCH BOARDS, DBS & CABLES**

11. Supplying and fixing MCB type TPNDB 4 way prewired in recess complete as required with copper busbars, N link etc. and following.

12. Supplying and fixing MCB TPNDB 4 way prewired in recess complete as required with copper busbars, N link etc.

13. Providing and fixing of 63 A (Category A) TPNSFU with HRC fuses complete as required including supplying and fixing of suitable angle iron frame.

14. Supplying, installation, testing and commissioning of cubical type wall/floor TPN distribution board with aluminium bus bars, wiring, connections, painting etc. complete as required with following switch gear and accessories as per approved drawing and design. I/c 125 A TPNSFU – with HRC fuses o/g 40 A TPN-MCB-125 A4P change over switch.

15. Supplying, installation, testing and commissioning of cubical type wall/floor mounted TPN distribution board with aluminum bus bars, wiring, connections, painting etc. complete as required with following switch gear and accessories as per approved drawing and design. I/c 125 A TPNSFU. O/g 125 A TPNSFU. 63A TPN -

**CABLES**

16. Supplying and installation of 1.1 KV grade PVC insulated sheathed and armoured Al. Conductor cable of following size as per IS : 1554 (Part – I) I) 3.5 × 50 sq.mm.

17. Laying and fixing of 1.1 KV grade PVC insulated sheathed and armoured Al. Conductor cable in ground or on wall/ceiling complete as required. I) 3.5 × 50 sq.mm.

18. Supplying and laying cable and termination with brass compression gland and crimped cable and sockets. I) 3.5 × 50 sq.mm.

19. Providing earthing station with G.I. Plate 600 × 600 × 6 mm watering pipe, masonry enclosure, C.I. cover plate etc. complete as required including salt and charcoal.

20. Providing and fixing G.I earth strip 50 × 5 mm in 65 mm dia G.I. pipes in ground.

21. Supplying and laying 2 × 55 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode as required.

22. Providing and fixing 6 SWG dia, G.I. wire in recess for loop earthing along with the existing/recessed conduits/sub main wiring/cable as required.

23. Supplying and drawing 2.24 mm copper loop earth wire in conduit.

24. Supplying and laying of 20 x 3 mm GI strip in parapet wall and vertical dropping ground.

25. Supplying and fixing of 300 mm long GI tube having single prong at top with 85 mm dia, 6 mm thick GI base plate including making holes as required.

**INSTALLATION OF LIGHT FITTINGS, FAN AND FIXTURES**

26. Supply, installation, testing and commissioning of prewired, fluorescent fittings of all types complete with all accessories and tubes etc. directly on
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<tr>
<td>ceiling/wall, including connections with 1.5 sq.mm PVC insulated, copper conductor, single core cable as required.</td>
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<tr>
<td>27.</td>
<td>Supply, installation, testing and commissioning of prewired, fluorescent fittings of all types complete with all accessories including supplying and fixing ball socket nos. down rod of 20 mm × 1.6 mm thick steel conduit upto 30 cm length painting and wiring the down rods and connections with 1.5 sq.mm PVC insulated, copper conductor, single core cable as required.</td>
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<tr>
<td>28.</td>
<td>Supply, installation, testing and commissioning of ceiling fan and regulator, including wiring the down rod of standard length (upto 30 cm) with 1.5 sq.mm PVC insulated, copper conductor, single core cable including cartage etc. complete.</td>
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<tr>
<td>29.</td>
<td>Supply, installation, testing and commissioning of exhaust fan upto 450 mm sweep in the existing opening, including making the hole to suit the sizes of the above fan, making good the damage etc. complete.</td>
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<tr>
<td>30.</td>
<td>Supply, installation, testing and commissioning call bell/buzzer and piano type bell push, suitable for D.C./A.C. single phase 230 volts complete as required.</td>
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<tr>
<td>31.</td>
<td>Supply, installation, testing and commissioning, erection of wall bracket/ceiling fittings of all sizes and shapes containing upto two GLS lamps per fitting, complete with all accessories including connections etc. required.</td>
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### 12.0 LIST OF APPROVED MAKE OF MATERIAL FOR ELECTRICAL

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<table>
<thead>
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<tbody>
<tr>
<td>1.</td>
<td>Switch Fuse Unit (HRC Type)</td>
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<tr>
<td></td>
<td>1. Larsen &amp; Toubro</td>
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<td>2. Siemens</td>
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<td>3. HPL</td>
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<td>2.</td>
<td>MCCB</td>
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<td>2. Siemens</td>
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<td>3. HPL</td>
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<tr>
<td>3.</td>
<td>Aluminum Conductor PVC Insulated Wires</td>
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<td>1. Plaza</td>
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<td>2. Paragon</td>
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<td>3. Finolex</td>
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<td>4. Universal</td>
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<td>5. Payal</td>
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<td>6. Polycab</td>
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<td>4.</td>
<td>Copper Conductor PVC</td>
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<tr>
<td></td>
<td>1. Plaza Insulated Wires</td>
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<td>2. Paragon</td>
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<td>6. Harsh</td>
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<td>7. Polycab</td>
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<tr>
<td>5.</td>
<td>Metal Clad Socket Outlet</td>
</tr>
<tr>
<td></td>
<td>1. Crompton</td>
</tr>
<tr>
<td></td>
<td>2. HPL</td>
</tr>
</tbody>
</table>
6. L.T. Panels
   1. Larsen & Toubro
   2. Crompton Greaves
   3. HPL

7. Bus Duct
   1. Zeta
   2. Best & Crompton
   3. ECS
   1. HPL
   2. Havells

8. Energy Meter
   1. Automatic Electric
   2. HPL

9. Frequency Meter
   1. SG
   2. Automatic Electric

10. Meter / CTS

11. Selector Switches
    1. KayCee
    2. Larsen & Toubro

12. Contactors
    1. Siemens
    2. Larsen & Toubro
    3. HPL

13. HRC Fuse
    1. HPL
    2. Siemens

14. Push Button & Pilot Lamps
    1. Larsen & Toubro
    2. Siemens

15. Battery Charger
    1. Automatic Electric
    2. Usha Rectifier

16. Batteries
    1. Exide
    2. Standard

17. Relays
    1. HPL

18. Timers
    1. Larsen & Toubro

19. Motors
    1. Siemens
    2. Kirloskar
    3. NGEF
    4. Crompton

20. Starters
    1. Larsen & toubro
    2. HPL
21. Rising Mains
   1. Zeta
   2. ECS

22. Volt / Amp. Meters
   1. Automatic Electric
   2. HPL
   3. Havells

23. Single Phase Preventor
   1. Larsen & Toubro

24. Indicating Lights
   1. Siemens
   2. SG

25. Pumps
   1. Beacon
   2. Kirloskar

26. Diesel Pumps
   1. Crompton Greaves
   2. Kirloskar

27. Air Compressor
   1. K.G. Khosla
   2. Ingersol

28. Ceiling Fans
   1. Usha-ENERGIA/Apollo
   2. Khaitan
   3. Polar
   4. Havells
   5. Orient –Summer Cool

29. Ceiling Light
   1. Havells
   2. Bajaj
   3. Jemco

30. Lugs
    1. Dowells

31. Epoxy based Cable Joints
    1. M. Seal
    2. Tropolin

32. Bolts for Panel
    1. Cadmium Plated

33. Clamps
    1. G.I.

34. Transformer
    1. Kirloskar
    2. Crompton
    3. Bharat Bijlee
    4. VOLTAMP
    5. NGEF
    6. Voltas
    7. ABB
<table>
<thead>
<tr>
<th>No.</th>
<th>Equipment</th>
<th>Manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Vacuum Circuit Breaker</td>
<td>1. Siemens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. G.E.C.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. BHEL</td>
</tr>
<tr>
<td>36</td>
<td>Air Circuit Breaker</td>
<td>1. Larsen &amp; Toubro</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Siemens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. HPL</td>
</tr>
<tr>
<td>37</td>
<td>Luminaries</td>
<td>1. Philips</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Crompton Greaves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Bajaj</td>
</tr>
<tr>
<td>38</td>
<td>Capacitors</td>
<td>1. Khatau Junkers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Universal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Voltas</td>
</tr>
<tr>
<td>39</td>
<td>Wire (Standard only)</td>
<td>1. Skytone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. National</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Payal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. KEI</td>
</tr>
<tr>
<td>40</td>
<td>Exhaust Fan</td>
<td>1. Usha</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Orient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Khaitan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Havells</td>
</tr>
<tr>
<td>41</td>
<td>Metal Box</td>
<td>MS sheet 10 gauge, painted with black paint.</td>
</tr>
<tr>
<td>42</td>
<td>Switch Gear / Isolator</td>
<td>1. Standard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Havells</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. HPL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. L &amp; T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Siemens</td>
</tr>
<tr>
<td>43</td>
<td>Bakelite sheet</td>
<td>Hylam White</td>
</tr>
<tr>
<td>44</td>
<td>Switch &amp; Sockets</td>
<td>1. Anchor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. HPL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Universal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Veto</td>
</tr>
</tbody>
</table>
5. Richa
6. CPL

45. Fluorescent & Other Fittings
   1. Philips
   2. Bajaj
   3. Crompton Greaves
   4. HPL

46. Conduit
   1. MS:- BEC, AKG, WAVIN, EMCO
   2. PVC:- Plaza, Richa, Calico, Payal

47. Cable
   1. Payal
   2. Incab
   3. Crystal
   4. Universal
   5. Finolex
   6. KEI
   7. Polycab
   8. RR KABEL

48. MCB Isolator & its DB
   1. MDS
   2. Havel
   3. Standard Koop
   4. Crompton Greaves
   5. HPL
   6. GECO

49. Fuse Carrier Bakelite / Rewirable
   1. Havells
   2. HPL
   4. Siemens

50. Other electrical fixtures
    Shall be of standard make and of BIS approved.

**Note:** The materials other than approved list shall bear IS mark and/or to be approved by the Engineer-in-charge before the use. Required tests are to be conducted by the contractor before use at works.

13.0 Electrical power supply feed point for connection to building shall be at a maximum distance of 30.00 (thirty) metres from the edge of the buildings.
14.0 GENERAL NOTES ON ELECTRICAL WORKS

(1) For switch boards – recessed 18 SWG sheet steel metal boxes of necessary size fitted with suitable size phenolic laminated sheet covers in front, including painting as required.

(2) Wiring shall be concealed with copper wire.

(3) Cable – PVC insulated with copper conductor for light points 1.50 sqmm ISI marked.

(4) Cable – PVC insulated with copper conductor for circuit wiring 2.50 sqmm ISI marked.

(5) Cable – PVC insulated with copper conductor for power points 4.00 sqmm ISI marked.

(6) All fittings & fixtures including switch / socket on existing board should be ISI marked of approved quality.

(7) All electrical fittings will be ISI marked and approved make.

(8) A sample of each kind shall be approved from engineer-in-charge and all the materials should be according to the approved sample.

(9) Two way switch shall be provided for staircase.

(10) Conduit for cable TV shall be provided.

(11) The location of light fitting shown in the drawing are indicative and actual position shall be approved by Engineer-in-Charge.

(12) Sub main wiring with cable PVC insulated sheathed copper conductor size 10 to 16 sqmm 32 mm dia PVC conduit.

(13) Electric power supply feed point for connection to the building will be at a maximum distance of 30 m from the edge of the building.

(14) Lighting conductor final, made of 25 mm dia, 300 mm long GI tube having single prong at top with 85 mm dia, 6 mm thick GI base plate including making holes etc. complete including GI tape 20 mm x 3 mm, testing joint made of 20 mm x 3 mm thick GI tape from earth electrode directly in ground all complete as per the instruction of Engineer-in-Charge.

(15) The location of main switch and distribution board shall be at ground floor below staircase.

(16) One no. earthing pit shall be provided for each block as per following details earthing with GI earth 600 mm x 600 mm x 6 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal or coke salt, b-class 50 mm dia GI pipe (normal) complete with GI fittings, including trenching, refilling etc. all complete as per the instruction of Engineer-in-Charge.
SPECIFICATION FOR SANITARY, WATER SUPPLY & PLUMBING

1.0 GENERAL

1.1 The scope of work comprises supply, installation, testing and commissioning of the facilities for water supply, sewerage and drainage, sanitary fixtures & fittings etc. The scope of work includes supply of all materials as per specifications and drawings, laying, fitting, fixing, installation, commissioning and testing of the same.

1.2 For all items of works the rates shall be comprehensive and all inclusive. The rate shall include for all matters and things necessary for satisfactory completion and maintenance of the work in proper working order and to the satisfaction of the Engineer, including testing, making samples etc. and all that have been indicated in the specifications or other tender documents either directly, or indirectly, and cover all obligations of the contractor under the contract. No claim for additional payment shall be allowed for any error or misunderstanding by the contractor of the work involved.

1.3 Unless otherwise mentioned in the description of the item, this BOQ shall be applicable for work in any height, position or condition.

1.4 Unless otherwise stated, method of measurement as described in the latest editions of IS: 1200 with its parts corresponding to different sections of work shall be followed. In case of any dispute in this matter, the decision of Engineer shall be final, binding and conclusive.

1.5 All the water supply, drainage and sanitary works shall be carried out strictly as per Central PWD specifications, 1996 Vol. (Two), 2002 Edition with upto date corrections slips for sanitary installation, water supply, drainage and miscellaneous works.

1.6 All the water supply and sanitary works shall be carried out by the licensed plumbers approved by the local authorities and skilled workmen, experienced in the trade.

1.7 All works shall be completely concealed within shafts or chases or in fills and dropped ceilings unless specifically shown in the drawings or required otherwise.

1.8 All works shall be adequately protected, to the satisfaction of the Engineer, so that the whole work is free from damage throughout the period of construction upto the time of handing over.

1.9 No work shall be covered without approval of the Engineer.

1.10 The contractor shall be responsible for coordinating the work with works of other trades sufficiently ahead of time to avoid unnecessary hold-ups. Hangers, sleeves, recesses, etc. shall be left in time as the work proceeds whether or not these are shown in drawings.

1.11 All clamps, screws, brackets, hangers and all miscellaneous steel work needed in the work shall be fully galvanized.

1.12 Only specified brand of materials will be used subject to approval of the sample.
1.13 Before the work is handed over, the contractor shall clean all fixtures, removing all plasters, stickers, rust stains and other foreign matter of discoloration of fixtures leaving every part in acceptable condition and ready for use to the satisfaction of the Engineer.

1.14 All sanitary-ware and fittings shall conform to respective BIS standards. The contractor shall submit samples of all fittings and fixtures proposed to be used to the Engineer for his approval.

1.15 The approved samples shall remain with the Engineer till the completion of the work.

2.0 **SCOPE OF WORK**

The contractor shall carry out and complete the work under this contract in every respect in conformity with the rules and regulations of the local authority. The contractor shall furnish all labour, supply and install all materials, appliances, equipments necessary for complete installation and testing of the whole plumbing services as specified and as per the relevant BIS codes and as shown on the drawings. This also includes all materials, appliances, equipment etc. not specifically mentioned herein or noted on the drawings but which are necessary and customary to make a complete installation as per the drawings or described herein, properly connected and in working order.

In general, the work to be performed under this contract shall comprise of the following:

1. All incidental jobs connected with plumbing services installation, such as excavation in trenches and back filling, cutting chases in concrete and brick work and making good, cutting / drilling holes through walls, floors and grounding for fixing of fixtures equipment etc.

2. Furnish and install a complete working, plumbing services installations shown on the drawings and described in this specification and as per the latest BIS specification.

3. Complete installation of internal and external water supply system.

4. Complete installation of the sewerage and sewerage appurtenances internally as well as around the buildings.

5. Complete installation of all sanitary and plumbing fixtures.

6. Repair of all damages done to the premises as result of this installations and removal of all debris left by those engaged in these installations.

7. Clean all plumbing fixtures, and ensure a satisfactory performance of all the fixtures at the time of testing and commissioning.

8. It is the responsibility of the contractor to take care of all the fixtures fitted until the time of handing over to the owner in working condition.

9. Painting of all the concealed and expose pipes, as specified.
3.0 Fee, Permits and Tests

The contractor shall pay all fees and obtain permits required for the installations of this work.

On completion of the work, the contractor shall obtain and deliver to the owner, certificates of final inspection and approval by the local authority. The EIC shall have full power to demand the materials or work to be tested by an independent agency at the contractor's expenses in order to prove their soundness and adequacy.

4.0 Drawings and Specifications

The drawings and specifications shall be considered as part of this contract and any work or materials shown on the drawings and not called for in the specifications and vice versa, shall be executed as if specifically called for in both. The drawing indicate the extend and general arrangement of the fixtures, drainage system, etc. and are essentially diagrammatic. The drawings indicate the points of supply and termination of pipelines and broadly suggest the routs to be followed.

The work shall be installed as indicated on the drawings. However, any minor changes found essential to co-ordinate this work with other trades shall be made without any additional cost. The data given herein and on the drawings is as exact as could be secured, but its complete accuracy is not guaranteed. The drawings and specifications are for the assistance and guidance of the contractor and exact locations, distances and levels will be governed by the building drawings and approval of the Engineer-in-charge herein after referred to as EIC shall be obtained before commencement of work.

At the completion of the work, contractor shall furnish necessary information like invert levels and layout of pipeline, for the preparation of final completion drawings, to the EIC.

5.0 Manufacturer’s Instructions

Where manufacturers have furnished specific instructions, relating to the materials used in this job, covering points not specifically mentioned in the documents, these instructions shall be followed in all cases.

6.0 Changes in Dimensions

If the size of the fixtures mentioned is not available, then the nearest available size shall be fixed with due consent of the EIC.

7.0 Materials

1. Unless otherwise specified all the materials shall conform to the respective Bureau of Indian Standards.

2. All the materials shall be as per the list of approved brand of manufacturers and sample for the same shall be got approved before placing order. The approved samples shall be deposited with the EIC.
8.0 **Sewerage Line**

Providing and laying sewerage line Non presence NP2 class (light duty) RCC pipe of 150 mm to 300 mm dia as required from the outlet of the building to the inlet of the septic tank or sewerage treatment plant with necessary manhole chambers etc. as per CPWD specifications.

9.0 **Sewer Appurtenances**

9.1 **Inspection Chambers & Manholes**

9.1.1 **Size of chambers/manholes**

The size given in bill of quantities and drawings shall be internal size of chamber. The work shall be done strictly as per standard drawing and following specifications.

9.1.2 **Benching**

Chanelling and benching shall be done in 1:3:6 cement concrete, rendering smooth with neat cement. The following size of chanells for the bench shall be adopted.

<table>
<thead>
<tr>
<th>Size of drain</th>
<th>Depth at Centre i.e. at walls</th>
<th>Depth at Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 cm</td>
<td>15 cm</td>
<td>25 cm</td>
</tr>
<tr>
<td>15 cm</td>
<td>20 cm</td>
<td>30 cm</td>
</tr>
</tbody>
</table>

9.1.3 **Chamber / Manhole**

Covers shall be of tough homogenous cast iron conforming to IS : 1726 with lifting hooks, as per the details given in the drawing and fixed on the MS frame embedded in the concrete.

C.I. steps duly painted shall be provided whenever the depth of the manhole/chamber is more than 1.2 mtr., as per instructions of EPI.

10.0 **Water Supply**

All water supply installation work shall be carried out through licensed plumber.

10.1 **Pipes and Fittings**

The pipes shall be of the medium quality galvanized iron, conforming to IS: 1239 and of approved make. It shall be of screwed or socket type. All fittings shall be malleable galvanized iron fittings of approved make. A sample of each kind shall be got approved from Engineer-in-Charge and all the materials should be according to the approve sample.
10.2 Laying and Fixing

The pipes shall be checked for any visible damage and shall be sorted out for reclamation. Any pipe which shows any damage shall not be used.

For internal work, all pipes and fittings shall be fixed truly vertical or horizontal, either by means of standard pattern holder-bat clamps keeping the pipes clear of the walls by 12mm everywhere or by concealing, as directed by EIC.

For external work, G.I pipes and fittings shall be laid in trenches. The width of the trench shall be the minimum width required for working. The pipes laid underground shall not be less than 50 cms from the finished ground level. The work of excavation and refilling shall be done as specified elsewhere, or instead concealed as directed.

10.3 Jointing

The pipes shall be cleaned and cleared from all foreign matter before being laid. In jointing the pipes, the inside of the socket and the screwed end of the pipes shall be oiled and rubbed over with white lead and a few turns of spun yarn wrapped round the screwed end of the pipe. The end shall then be screwed in the socket, Tee etc. with the pipe wrench. Care shall be taken that all the pipe fittings are properly jointed so as to make the joints completely water tight and pipes are kept at all times free from dust and dirt during fixing. Burr from the joints shall be removed after screwing. After lying, the open ends of the pipes shall be temporarily plugged to prevent access of water, soil or any other foreign matter.

10.4 Painting

All buried GI pipes shall be painted with two coats of anti-corrosive bituminastic paint of approved make.

10.5 Testing

Before any pipes are painted or covered, they shall be tested to a hydrostatic pressure of 7 Kg/sq.cm. Pressure shall be maintained for at least eight hours without appreciable drop in pressure. In addition to the sectional testing of water supply pipes, the contractor shall test the entire installation to the complete satisfaction of the EIC. He shall rectify any leakages, failure of fittings or valves.

10.6 Water Fittings (Taps, Stop Cock etc.)

All water fittings shall be of approved make and shall generally comply to the latest BIS specifications. The fittings and joints shall be tested as specified & for pipe line; to ensure that the joint are leak proof, defective fittings and the joints shall be repaired or redone/replaced as directed. A sample of each kind shall be for approved from Engineer-in-Charge and all the materials should be according to the approve sample.
10.7 **Valves**

a) Fullway and check valve above 65 mm dia shall be CI double flanged conforming to IS-780 and as per approved make.

b) Fullway and check valve up to 65 mm dia shall be gun metal tested in 20 kg/cm² pressure and conforming to IS-778.

c) Foot valve shall be of gun metal.

11.0 **Sanitary Fixtures and Fittings**

11.1 **Workmanship**

All sanitary-ware shall be fixed in a neat workman like manner, true to level and plumb. Manufacturers instructions shall be followed closely regarding installation and commissioning.

11.2 **Sanitary Ware**

All sanitary ware shall be of first quality, free from warps, cracks and glazing defects. All sanitary ware, fittings and fixtures shall be as shown in drawings.

11.3 **Testing**

When the installation has been completed the satisfaction of the Engineer it shall be tested in the following manner.

(a) The entire system shall be slowly filled with water, allowing any trapped air to escape.

(b) When all outlets are closed the system shall be checked for water tightness.

(c) Each outlets shall then be checked for rate of flow and correct operation.

12.0 **Sanitary Installation and Fixtures**

All fixtures shall be fixed in a neat workman-like manner, true to line and as recommended by the manufacturers or as shown on the drawings. Care shall be taken to fix all fixtures, bolts and nuts and each fixture will warrant the correct size of screws or nuts and bolts.

Care shall be taken in fixing all chromium plated fixtures and accessories so as not to leave any tool marks or damages on the finish. All such fixtures shall be tightened with fixed spanner. Use of ‘Stilson’ type pipe wrenches with toothed jaws shall not be allowed.

All fixtures shall be thoroughly tested after connecting with the drainage water supply system. All fixtures shall be thoroughly flashed and any leakage in piping, valves and fittings corrected to the complete satisfaction of EIC.

Upon completion of the works remove all levels, stickers, plasters etc. from the fixtures and clean all fixtures with soap and water so as to present neat and clean toilets. All vitreous sanitary appliances (Vitreous China) shall conform to IS: 2556 (Part – I).
12.1 **Indian Water Closet**

Indian water closet with ‘P’ or ‘S’ trap shall be of Orissa type with 32 mm PVC flush pipes, lower level PVC cistern, CP stop cock. Indian water closet and trap shall be set in 1:4 lime surkhi concrete and flush with floor. Low level cistern shall be fixed at a height as per drawings or as directed by the EIC.

12.2 **Wash Basins**

This shall be of white vitreous china clay of good quality, of approved make and size as specified in the drawing. These shall be supported on a pair of CI brackets of approved design.

12.3 **Sinks**

Sinks shall be of stainless steel and of approved make and size as specified in the drawing.

12.4 **Mirror**

The mirror shall be of 5.5 mm thickness. The size shall be as specified in the approved drawing and made with commercial plywood fixed to the back of the mirror. Mirror shall be fixed to the wall with CP side clips and screws. The mirror shall be as per relevant BIS specification.

12.5 **Towel Rail**

Towel rail shall be of chromium plated steel with brackets, bends and circular flanges. The size of the rail shall be as specified in the drawing. The brackets shall be fixed by means of CP brass screws to wooden cleats, firmly embedded in the wall.

12.6 **Floor Traps**

The traps shall be of CI and self cleaning and deep water seal type with a 50 mm water seal. It shall have a 150 mm dia grating. These shall be fixed in concrete to the required level and position.

12.7 **Shower**

These shall be of CP finish swivel type and of size as mentioned in the drawing.

12.8 **Towel Ring, Soap Tray, Cloth Stand etc.**

These shall be of CP finish. These shall be fixed by means of CP brass screw to wooden clips firmly embedded in the wall.

13.0 **Location of septic tank, if constructed**

Location of septic tank, if constructed shall be at a maximum distance of 30.00 (thirty) metre from the edge of the building if not otherwise mentioned in the drawing.
14.0 Feed point for water supply pipe line to buildings shall be at a maximum distance of 30.00 (thirty) metre from the edge of the buildings.

15.0 If sewerage treatment plant is provided instead of septic tank sewer line including inspection chamber up to a distance of 30.00 m from the edge of the building shall be considered included in the lump-sum price of the building.

16.0 LIST OF APPROVED MAKE OF MATERIAL

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>Make</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Vitreous China Sanitary Ware</td>
<td>Hindustan Sanitary Ware / Cera / Neycer / Parryware</td>
</tr>
<tr>
<td>3.</td>
<td>Stainless Steel Tank</td>
<td>Orient / Suhag / Nirali / Anjali / Swastik / Diamond</td>
</tr>
<tr>
<td>5.</td>
<td>Valves</td>
<td>Kirloskar / Kilburn / IVC / L&amp;T</td>
</tr>
<tr>
<td>7.</td>
<td>Submersible Pumps</td>
<td>Kirloskar / KSB / Grudfoxx</td>
</tr>
<tr>
<td>8.</td>
<td>CP Fittings</td>
<td>Sona / Gem / Jaguar / Esses / Essco</td>
</tr>
<tr>
<td>9.</td>
<td>White Glazed Fire Clay Sinks</td>
<td>EID / Parry</td>
</tr>
<tr>
<td>10.</td>
<td>Hot Water Heaters</td>
<td>Racold / Bajaj / Voltas / Venus</td>
</tr>
<tr>
<td>11.</td>
<td>Ball Valve with Float</td>
<td>Leader / Kilburn / Prayag</td>
</tr>
<tr>
<td>12.</td>
<td>Manhole Cover</td>
<td>BC / TDS or equivalent</td>
</tr>
<tr>
<td>13.</td>
<td>CI Sluice Valve</td>
<td>Kirloskar / IVC / Leader</td>
</tr>
<tr>
<td>14.</td>
<td>Overhead Water Tank</td>
<td>Sintex / Polycon / Roma / Patton</td>
</tr>
<tr>
<td>15.</td>
<td>PVC Pipes Fittings</td>
<td>Parag / Jindal / Supreme/ KiTEC / Prince</td>
</tr>
<tr>
<td>16.</td>
<td>GI Pipes Fittings</td>
<td>Jindal / Tata / Kalinga / ITC / BST / Zenith</td>
</tr>
</tbody>
</table>
### 17.0 **IS CODE**

<table>
<thead>
<tr>
<th>IS Code</th>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS 1172</td>
<td>1971</td>
<td>Code of basic requirements for water supply, drainage and sanitation (Revised).</td>
</tr>
<tr>
<td>IS 4111</td>
<td>1967</td>
<td>Code of practice for ancillary structures in sewerage system.</td>
</tr>
<tr>
<td>IS 1626</td>
<td>1960</td>
<td>A.C. building pipes gutters and fittings (spigot and socket type).</td>
</tr>
<tr>
<td>IS 3989</td>
<td>1970</td>
<td>Centrifugally span cast iron spigot and socket soil, and ventilating pipes, fittings and accessories.</td>
</tr>
<tr>
<td>IS 1239</td>
<td>1968</td>
<td>Specifications for mild steel tube, tubulars and other steel pipes and fittings.</td>
</tr>
<tr>
<td>IS 6295</td>
<td>1971</td>
<td>Code of practice for water supply and drainage in high altitude and or sub-zero temperature regions.</td>
</tr>
<tr>
<td>IS 6511</td>
<td>1965</td>
<td>Specifications for salt glazed stoneware pipes and fittings (first version).</td>
</tr>
<tr>
<td>IS 2556</td>
<td></td>
<td>Specifications for vitreous sanitary appliances (vitreous china)</td>
</tr>
</tbody>
</table>

**Note:** The material other than approved list shall also bear ISI Mark and / or to be approved by the Engineer-in-Charge before use. Required tests are to be conducted by the contractor before use at works.